Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Faculty of Humanities and Social Sciences

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Philosophy**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Philosophy and other types of worldview	Philosophy and wisdom. Philosophy and everyday thinking. Philosophy and mythology. Philosophy and private sciences. Philosophy and religion.
Features of human knowledge and its boundaries	Objective and subjective knowledge. Socrates' maieutics. Sophists and skeptics about objective knowledge. Francis Bacon and the Idols of Consciousness. The method of doubt by R. Descartes. Science and objective knowledge. Verification and falsification (K. Popper).
Philosophical anthropology. The phenomenon of consciousness	Instincts and intelligence. The concept of artificial intelligence. Thinking and language. Consciousness and self-knowledge. Concepts of the unconscious of the twentieth century.
Problems of beings and foundations of human existence	The concept and conditions of free will. Fatalism: an assessment of the worldview. Hard and soft determinism. Self-determinism (stoicism, existentialism).
Philosophy of morality and ideals of human life	Morality and legal norms. The concept of justice. Egoism, rational egoism and individualism. The golden rule of morality. I. Kant's Ethics and utilitarianism. Ethical problems of the death penalty. The problem of the meaning of human life.
Social philosophy: ideals of a just society	Plato on ideal and imperfect states. K. Marx on social ideals. The concept of alienation. Democratic principles of justice in contemporary society. The concept of progress. Scientific, technical and social progress. Industrial and post-industrial societies.

Developers:

Associate Professor of the Department of Social Philosophy S.V. Rudanovskaya

Head of the Department of Social Philosophy M.L .Ivleva

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Law Science**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Fundamentals of the theory of law and state	Concept, sources and system of law. The concept of the state. Classification (form) of states - administrative-territorial division, form of government, political regime. Law and order and the idea of justice. Lawful and illegal behavior. Legal responsibility.
National and international law	The main issues of regulation of national and international law. Subjects of international law and the relationship between private and public international law. Concept and types of international treaties. International organizations.
Fundamentals of Constitutional Law	Constitution as the basis of the national legal system. Issues of constitutional regulation - constitutional legal relationships. Sources of the constitutional law of the Russian Federation. Fundamentals of the constitutional system of the Russian Federation. Rights and freedoms, as well as constitutional obligations of a person and a citizen.
Fundamentals of Civil Law	The main issues of civil law regulation. Sources of civil law in the Russian Federation. Subjects of civil legal relationships. Deal and contract - types and main features. Civil liability.
Fundamentals of Criminal Law	Criminal law, crime and punishment are the three main criminal law doctrines. Principles of criminal law. Criminal liability and some problems of the execution of sentences.
Fundamentals of the medical activity legal regulation	The main issues of regulation of medical law. Medical legal relationship. Sources of medical law. Subjects of medical legal relations. The responsibility of healthcare professionals. Iatrogenic crimes.

Developers:

Professor
Department of Judicial Authority,
Law-Enforcement and Human Rights Activity — Badma V. Sangadzhiev

Senior Lecturer
Department of Judicial Authority,
Law-Enforcement and Human Rights Activity — Denis A. Dobryakov

Head of the Department
Department of Judicial Authority,
Law-Enforcement and Human Rights Activity — Valery V. Grebennikov

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the subject		**History of Medicine**
The amount of the subject		**3 CU (108 hours)**
Course Description		
Topics		**Content of topics**
1	Introduction. Early types of healing	1.1. Formation of prehistoric society and healing. 1.2. Healing during the flourishing of prehistoric society. 1.3. Healing during the decline of prehistoric society. 1.4. Folk medicine.
2	Healing and Medicine in Ancient civilizations	2.1. Common characteristics of Ancient civilizations. 2.2. Healing and Medicine in Ancient Mesopotamia (Sumer, Babylonia, Assyria). 2.3. Healing and Medicine in Ancient Egypt. 2.4. Healing and Medicine in Ancient India. 2.5. Healing and Medicine in Ancient China. 2.6. Healing and Medicine in Ancient Greece. 2.7. Healing and Medicine in Ancient Rome.
3	Medieval Medicine (V–XV centuries)	3.1. Medicine in the Byzantine Empire. 3.2. Medicine in the Caliphates (VII–X centuries). 3.3. Medicine in Middle and Central Asia (X–XV cc.). 3.4. Medicine in Medieval Rus (IX–XV centuries). 3.5. Medicine in Medieval Western Europe (V–XV centuries).
4	Medicine in Early Modern Time (XV – early XVII century)	4.1. Renaissance Medicine in Western Europe. 4.2. Medicine in the Americas before and after the conquest (Mayas, Aztecs, Incas). 4.3. Medicine in the Great Moscow Princedom, XV–XVII centuries.
5	Bio-Medical sciences in Modern Times (mid XVII–XIX century)	5.1. The greatest discoveries in Natural sciences. 5.2. Biology and Genetics. 5.3. Anatomy. 5.4. Histology. Embryology. 5.5. Pathology. 5.6. Microbiology. 5.7. Physiology and Experimental Medicine.
6	Clinical Medicine in Modern Time (mid XVII–XIX century)	6.1. Internal Medicine. The first physical methods and instruments for clinical examination. Medical education. 6.2. The Russian medicine and education in XVIII–XIX centuries. 6.3. Infectious diseases and Epidemics. 6.4 Problems and progress of Surgery.

		6.5. History of Nursing.
7	Medicine and Public Health in the XX century	7.1. History of Nobel Prizes. The Nobel prizes in Physiology or Medicine. 7.2. Medicine and Public Health in Russia in XIX–XX centuries.
8		8.1 International co-operation in Public Health and Medicine (International Red Cross; the World Health Organization; World Physicians against the Nuclear War)

Developer:
Head of the Department for the History of Medicine,
Professor T.S. Sorokina

Federal State Autonomous Educational Institution of Higher Education
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Faculty of Humanities and Social Sciences

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**History**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Theory and methodology of Historical Science	1. History as science
Ancient Rus in Medieval age	2. Ancient Rus' 3. Feudal fragmentation and struggle for independence 4. Formation of the Russian united state
Russia on the brink of New Age and in the New Age	5. Russia in the XVI century. Ivan the Terrible 6. Time of Troubles and the beginning of Romanov's reign 7. Peter I and his age 8. The age of Palace coups 9. The Russian Empire in the second half of the XVIII century 10. Russia in the first quarter of the XIX century. Paul I. Alexander I. Patriotic war of 1812 11. Decembrists movement. Reign of Nicholas I 12. Alexander II and the era of reforms 13. Russian Empire during the reign of Alexander III 14. Features of the development of capitalism in Russia (the last quarter of the XIX century.)
Russia and USSR in contemporary times	15. Russian Empire in the beginning of XX cent. Nicholas II. 16. Revolutions in Russia 17. Domestic policy of Soviet Russia and the USSR in the prewar period 18. The USSR during the great Patriotic war (1941-1945) 19. Postwar years. The beginning of Khrushchev's rule. 20. Thaw as a special stage of development of the USSR. 21. USSR under L. Brezhnev 22. USSR in 1985-1991. Perestroika. 23. Collapse USSR and the creation of CIS

	24. Formation of modern Russia. Vladimir Putin. 25. The role of RUDN as a "soft power" in the international relations

Developers:

Associate Professor
Department of Russian History A.V. Mironova

Head of the Department
Department of Russian History M. N. Moseikina

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Russian Language for Foreign Students**
The amount of the discipline	**720 hours**
Course Description	
Topics	**Content of topics**
Learning to talk about diseases (patient's pathological state)	Etiology of the pathological state General characteristics of the pathological state Disease's clinical pattern Symptoms and their characteristics
The development of disease (pathological state)	Methods of disease treatment Use of medicine Effectiveness of the use of medicine

Developers:

Associate Professor
Russian Language Department M.A. Makarova

Head of the Department
Russian Language Department  V.B. Kurilenko

Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Russian Language (as Foreign Language)**
The amount of the discipline	**4 CU (144 hours)**
Course Description	
Topics	**Content of topics**
The structure of an object	Identification of components of an object Complete set of components: complete/ incomplete set of components. Presence / absence of a component (components) in the structure of an object; Quantitative characteristics of components of an object. Localization of components in an object; place of a component in an object; mode of localization of a component in an object; arrangement of components in an object; connection of components in an object Qualitative and quantitative composition of the object.
Qualitative and quantitative characteristics, properties of the object	The shape, relief of the surface of the object: the shape of the object; surface's relief of the object. The consistency, properties, color, taste, smell of an object: the color of an object; the taste and smell of the object; object consistency, object properties. Quantitative characteristics of the object: the exact size of the object; fluctuations in the size of the object; maximum object size.
The function of the object	Function of the object. The essence of the function. Conditionality of the function of the object.
Classification of objects	Classes of objects. Characteristic of classification and classes of objects. Members of object's class.
General characteristics of the object	Structure of a microorganism. Localization of a biological object. Mode of nutrition of an organism. Mode of reproduction of an organism.
Development (life-cycle) of a biological object	Host of a parasitic microorganism. Stages of life-cycle / development of a microorganism. Processes of a stage of a life-cycle.

General characteristic of a disease caused by pathogenic microorganism	Identification of a disease caused by pathogenic microorganism. Area of the disease activity. Ways and conditions of infecting. Symptoms and signs of a disease. Clinical outcome. Disease prevention.
General characteristic of a physiological process	Definition of a process. Classification of processes. Essence of a process. Stages of a process.
Main mechanisms of a process	Alteration of qualitative and quantitative characteristics of an object. Appearance (birth) and disappearance (destruction, death) of a new object. Change of localization of an object (movement).
Alteration dynamics of process	Alteration in the intensity of the process. Violation and termination of the process.
Role of the physiological process	The significance of the process. The characteristic of the benefit / harm of the physiological process for the organism.

Developers:

Associate Professor
Russian Language Department M.A. Makarova

Associate Professor
Russian Language Department Yu.N. Biryukova

Associate Professor
Russian Language Department K.V. Klasnja

Head of the Department
Russian Language Department  V.B. Kurilenko

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Latin Language**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Anatomical and histological terminology	Latin alphabet. Diphthongs and Digraphs. Rules for reading and stressing. The system of the Latin nominal declension. The rule for determining the declension of nouns. Dictionary form of nouns. Nouns of 1 declension. Ambiguous modifiers. Structure of noun phrases. Nouns of 2 declensions. Adjectives 1-2 groups. Dictionary form of adjectives. Unmbiguous modifiers. The structure of noun and adjective phrases. of adjectives. Features of their use in medical terminology. Prefixation. Nouns of 3 declension. Types of 3 declensions - consonant, mixed, vowel declension. Nouns of 4 declension. Nouns of 5 declension.
Clinical terminology	Prefixation and suffixation as ways of word formation in Latin. Introduction to clinical terminology. Classification of clinical terms. Stem formation. Greco-Latin doublets. Single term elements. Greek TE for body parts, organs and tissues. Greek TE for therapeutic and surgical techniques. Greek TE, denoting functional and pathological processes, conditions. Greek TE, denoting functional and pathological processes, conditions.
Pharmaceutical terminology.	Names of medicinal substances. Verbs in pharmaceutical terminology. Imperative. Conjunctive. Personal endings of the active and passive voice. Standard prescription formulations. Pharmaseutical forms. Prepositions. Accusativus. Ablativus. Prescription expressions with prepositions.

	Prescription structure. Chemical terminology. Names of chemical elements. Methods for the formation of the names of acids, salts, oxides. Important prescription abbreviations.

Head of Department
Foreign Languages Department N.M. Dugalich

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Psychology and Pedagogy**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Introduction to psychology	History of psychology. The subject and methods of psychology. Branches of psychology. Categories of psychology. Functions of the psyche. Basic mental processes.
The development of the Psyche. Zoopsychology.	2. Zoopsychology from ancient times to the creation of the first evolutionary theory. The main methods of zoopsychological research. The value of zoopsychology in medicine.
Sensation. Perception. Attention.	Cognitive mental processes in the knowledge of reality. The perception of objects, the time of the relationship between objects of space, man. Attention arbitrary (active) involuntary (passive) post-arbitrary.
Memory.	Memory and its meaning. Types of memory The main processes and mechanisms of memory. Individual features of memory. Typological features of memory. The value of memory for human life.
Thinking. Speech Imagination.	Types, forms, methods, operations, individual features of thinking. The development of thinking in ontogenesis. The laws of logic and thinking. Violations of thinking. Pathopsychological and clinical classification of thinking disorders. Types of imagination. Iatrogenesis. Pathological forms of imagination. Types and functions of speech. The ratio of thinking and speech. Speech disorders.
Will.	Will. The concept of the will. Volitional acts. Functions will. The development of the will. Strong-willed personality traits.
Emotions.	The concept and classification of emotions. Theory of James-Lange. Emotions generated by the social environment. The role of emotions in the mental organization of man.
Personality. The focus of the individual. Motives.	The concept of personality in various psychological approaches. Personality structure. Levels, rules and methods for constructing psychological characteristics of a person.

Temperament. Character. Abilities. Makings.	Types of temperament and their psychological characteristics. The role of temperament in the activity. Character. The classification of character traits. Types of character. Accentuations of character. Definition of abilities. Types of abilities. Ability structure. Ability levels. Talent. The makings and abilities. Addictions.
Communication. Ethics. Deontology in medicine.	Relationship levels: doctor - patient; doctor - nurse; doctor - doctor; a nurse is a patient; nurse - nurse; doctor - administration; doctor - junior medical staff; The concept of "internal picture of the disease." The problem of theoretical modeling of the internal picture of the disease. The basic principles and methods of studying the internal picture of the disease.

Developers:

Professor of the Department
of Psychiatry and Medical Psychology M.S. Artemyeva

Associate Professor of the Department
of Psychiatry and Medical Psychology A.G. Lazukova

Head of Department
of Psychiatry and Medical Psychology I.V. Belokrylov

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Scientific and Educational Institute of Physical Research and Technologies

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Physics**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introductory lecture. Fundamentals of vector and mathematical analysis	Methods of processing of measurement results. Direct and indirect measurements. Theory of errors. Types of errors: gross, systematic, random; absolute, relative. Rules for registration of laboratory work. The order of writing the abstract. Safety at work in the physical laboratory. Basic concepts of mathematical and vector analysis. Derivatives and differentials. Rules for adding (subtracting) and multiplying vectors. Integration rules. Calculations of indefinite and definite integrals.
Mechanics. Oscillations	Introduction. Definitions (kinematics, dynamics, statics, trajectory, reference systems, equation of motion). Rectilinear motion. Circular motion. Inertia. Force of inertia. Dynamics of rotational motion. Moment of inertia. The moment of impulse and the law of its preservation. Gravitational interaction. Acceleration of gravity. Weightlessness. Harmonic vibrations. Gravitational interaction. Acceleration of gravity. Weightlessness.Longitudinal and transverse waves. Ultrasound.
Dynamics, mechanical oscillations	Work and energy. Potential field, the work of conservative forces, potential energy. Kinetic energy. The law of conservation of energy. Rotational motion of a rigid body. A moment of strength. The basic equation of the dynamics of rotational motion. The equation of motion of the angular momentum. The law of conservation of the angular momentum.
The waves. Sound wave	Mechanical waves. The plane wave equation. Parameters of vibrations and waves. Energy characteristics. The Doppler effect and its use in medicine. Sound. Types of sounds. A complex tone and its acoustic spectrum. Wave resistance. Objective(physical)and subjective (biological) characteristics of sound. Infrasound. Ultrasound, the physical basis of application in medicine.

Hydrostatic. Molecular Physics	The viscosity. Methods for determining the viscosity of liquids. Stationary flow, laminar and turbulent flows. Newton's formula, Newtonian and non-Newtonian liquids. The Poiseuille formula. The Reynolds number. Features of hemodynamics in the main, resistive, capillary and venous vessels of the circulatory model. Work and warmth. The first beginning of thermodynamics. Heat capacity. An adiabatic process (Poisson's formula). The basic equation of molecular kinetic theory. The heat and motion of molecules. The first principle of thermodynamics applied to the human body. The role of nutrition and respiration. Internal energy. Internal pressure and surface tension in the fluid. Diffusion. Osmosis. Wetting Capillary phenomena.
Electricity and magnetism	Electric charges and their properties. Coulomb's law. The electrostatic field. Field strength. Power lines. Potential. Equipotential surfaces. The relationship between tension and potential. Conductors in an electrostatic field. Electrical capacity. Capacitors, their connection. The energy of the electric field. Current strength and current density. Electromotive force (EMF.). of the EMF source. Ohm's law for a homogeneous, inhomogeneous section of the circuit, for a closed circuit. The Kirchhoff rules. Ohm's laws and Kirchhoff's rules for direct current. Electric and magnetic fields, currents and electromagnetic fields. The total resistance (impedance) in electrical circuits. Ohm's law for alternating current and voltage. Diathermy. UHF therapy. Microwave therapy. Physical foundations of rheography and its application in medicine.
Optics	Geometric optics. The phenomenon of total internal reflection of light. Refractometry. Fiber optics. The eye is an optical system. Microscopy. Wave optics. Electromagnetic waves. The scale of electromagnetic waves. Energy characteristics of light fluxes: the flux of light radiation and the flux density (intensity). Diffraction grating. The resolution of optical devices and the eye. The polarization of light. Polarization microscopy. Polarimetry. The interaction of light with matter. Light scattering. Light absorption. The Booger-Lambert-Behr law.
Electromagnetic radiation of the optical range	Thermal radiation. Characteristics and laws of thermal radiation. The spectrum of black body radiation. The radiation of the Sun. Application of Kirchhoff's law for measuring brightness temperature. Calculation of the radiation temperature based on the Stefan-Boltzmann law. Lasers and their application.

Atomic structure. EPR. NMR. Ionizing radiation.	Atomic structure. Nuclear force. Isotopes. Electronic paramagnetic resonance. Nuclear magnetic resonance. Principles of magnetic resonance imaging. Electron-positron tomography. Ultraviolet radiation and its application. X-ray radiation and its use in land management. Radioactive radiation. Detection and dosimetry of ionizing radiation

Developers:

Docent S. P. Karnilovich

Senior teacher L. P. Uschenko

Director **O.T. Loza**

Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Mathematics**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to Algebra	What are the numbers. The numeric axis, the modulus of the number. Conversions of numeric fractions. Numeric, alphabetic, and algebraic expressions. Transformations of algebraic expressions. Percentages, mass concentration. The proportion. Logarithm.
Linear algebra	1. Cartesian coordinate system. System solution of two linear equations (TLE) by analytical and graphical methods. Numerical axis. Cartesian coordinate system. Equality. Equation. Graphical and analytical solution of equations. Solution of a linear equation with 1 unknown. The solution of a linear equation with 2 unknowns is the solution of a system of 2 linear equations with 2 unknowns. 2. Vectors and matrices. The solution of the TLE by the Gauss-Jordan method. Scalar and vector. The scalar product of vectors. Orthogonality. The length of the vector. The angle between the vectors. The method of adding equations. Matrix notation of TLE, the Gauss-Jordan method with integer coefficients for the case of certain systems. 3. Linear dependence of the equations. The general and particular solution of the TLE. Linear dependence of vectors, equations (algebraic and geometric interpretations). A general and a particular solution of a joint indefinite case. Incompatible systems. 4, 5. Multiplication of vectors and matrices. The transformation of a vector in the form of its multiplication by the matrix on the left - algebraically and geometrically (on the plane). The product of matrices. 6. Determinant and eigenvalues of the matrix. The determinant of the 2x2 matrix. Kramer's rule. Homogeneous systems. The eigenvalues and eigenvectors of the 2x2 matrix, the characteristic equation of the matrix.
Differential calculus	1-3. Functions and their graphs. Numbers, parameters, Variables. Cartesian coordinate system. The function, the methods of its assignment, the scope of the function definition. The function graph, its advantages. Functions and their graphs in physiology. Elementary functions and their graphs. Transformation of graphs. Properties of functions (positivity,

	negativity, parity, odd, monotony, extremes, kinks of the graph, periodicity). Plotting a graph based on features (without a table). Graphs of functions with parameters. Asymptotes. Sequence limit. Limit functions (limit of a continuous function at a point and at infinity; limit at the point of discontinuity). Finding the limit of a rational function at infinity. Theorems about limits. Analysis of the function graph using limits. A plan for analyzing functional dependence. 4-6. Fundamentals of differential calculus. Analysis of graphs using derivatives. The speed of mechanical movement, the rate of change of physiological variables. Derivative. Tangent and secant. Angular coefficient of the tangent. Linearization of the function, differential. Calculation of the simplest derivatives. Table of derivatives. Differentiation rules. Analysis of function graphs using the 1st and 2nd derivatives. 7-9. Fundamentals of integral calculus. Differential equations (DE) with separable variables. DE of one variable. The reason for using DE. Examples from physics, chemistry, biology. Autonomous and non-autonomous DE. General and particular solutions of the DE. Cauchy problem. Graphical representation of the solution. Primitive and indefinite integral. Geometric meaning of the primitive. Table of indefinite integrals. Rules of integration. DE with separable variables. A certain integral, a formula Newton-Leibniz. Integration of the DE of one variable taking into account the initial condition. The use of DE for the analysis of the kinetics of chemical and biological processes is the basis of chemical kinetics.

Developers:

Associate Professor
Mathematical Institute named after akad. S. M. Nikolsky Tokarev A. A.

Director
Mathematical Institute named after akad. S. M. Nikolsky Skubachevsky A. L.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Medical Informatics**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Contents of topics**
Introduction to Medical Informatics	**Basic concepts of medical informatics.** Concept of information, presentation of information in a computer. General characteristics of the collection, transmission, processing and accumulation of information. Methods and means of informatization in medicine and health care. **Medical Informatics Hardware.** The concept of information, representation information in the computer. Computer architecture, main units of IBM PC (system unit, keyboard, monitor), principle of open architecture. Input devices (keyboard, mouse, scanner, joystick, and digitizer). Output device (monitor, printer, plotter). Random access memory. Permanent storage device. External storage devices. **Software tools for the implementation of information processes.** **Section contents:** Types of software (system software, applications, programming systems), file archiver (Zip, Arj, Rar), virus protection programs. The concept of "operating system", types of operating systems interface (command, graphic). Family of operating systems DOS, Solaris, Linux, Mac OS. Organization of the file system: files, directories (folders), the types of files and folders, current directory, path to the file, names of the devices, the full file name. Logical and physical discs.
Technology for Processing Medical Data Using Word Processor	**Introduction to word processors Microsoft Word, Open Office Writer.** Structure of the Program Writer, basic control elements: title bar, menu bar, toolbar, control line, status bar, scroll bar, document window, indicators (input cursor, mouse). Creation, saving and closing the document, work with windows search a saved document. Menu structure (File, Edit, View, Insert, Format, Tools, Table, Window). Entering text. Symbols formatting (changing the tracing, font type and size), paragraph formatting (set line spacing, paragraph alignment), tabulation, preview. **Complex document formatting, special functions.**

	Page settings, headers and footers, input text in multiple columns. Working with lists (bulleted, numbered, multilevel). Stylistic formatting, patterns. Indexes and table of contents. Creating sections. Inserting special symbols, drawings, objects. Editing formulas. Inserting graphics into a document. SmartArt and WordArt. **Word processor writer, tables** Creating a table, cells, rows, columns, headers, borders and flood fill, automatic formatting, inserting rows and columns in the table. Using formulas.
Medical Data Processing Technologies Using Spreadsheets	**Introduction to spreadsheet processors Microsoft Excel, OpenOffice Calc** Main components of the program: title menu, toolbar, string of formulas, worksheet labels, status bar, the working area. Working area of the program: columns and rows, cells, workbooks and worksheets. Cells addressing. Types of data. Entering and editing data. Cells formatting. **Using math functions in Microsoft Excel, Open Office Calc.** Sorting and searching data, entering formulas, priorities of mathematical operations, actions in a cell. Introductionto basic mathematical, statistical, logical functions. **Medical data visualization in a spreadsheet.** **Section contents:** Construction and editing of charts, histograms, graphs. Diagram wizard. Chart options. Exploring the construction of a linear function diagram.
Technologies for Storing and Processing Medical Data Using Database Management Systems	**Introduction to data base Microsoft Access and OpenOffice Base.** Database concept, database management system (DBMS), relational databases. Relational database structure: table, record, field. Data types., Basic elements: tables, forms, reports, queries, macros, modules. Table constructor, form wizard. Database design. Editing field properties, key fields. Direct data entry into a table, data entry using a form. **Working in a DBMS with medical data.** Working with information: search, sorting, queries. Creation of queries. Select query, query to create tables, query to update, add, delete, query designer. Selection conditions, wildcards, operators and operands. Functions, group operations. Search, sorting, selection of records using filter.
Computer Networks in Medicine	**Network technologies** Types of computer networks: local, corporate network. Network architecture. Search for information in the WWW, search engines, browser. Unified resource locator, keywords, types of information resources. Medical Internet resources for finding professional information. **Internal electronic resources of RUDN University.** e-mail, client and server mail services. Email service providers. Working with letters, attachments, address book. E-mail security basics, SPAM. Internal electronic resources of RUDN University, Telecommunication educational and information system of RUDN University.
Medical Information Systems	**Introduction to MIS**

	Classification of medical information systems. General requirements for medical information systems. The importance of standards in creating and ensuring the interaction of medical information systems. Organizational support for the functioning of medical information systems. **Information model of the treatment and diagnostic process.** The main components of the treatment-diagnostic or health-improving-prophylactic process. Compliance of MIS components with the components of production processes. The activity of a medical worker as an object of informatisation. Introduction to the Remsmed platform. Material, technical and personnel support of the IIA. Business games in the study of IIAs. Models of the activities of the departments of health care facilities. EMMAREHA rehabilitation planning and monitoring system. Medical Information System according to the method of Tavrovsky V.M
Application of Mathematical Methods to Describe Biomedical Processes	**Application of probability theory for processing the results of biomedical experiments.** Types of random events. Venn diagrams in medicine. The probability of a random event. Combinatorial formulas: permutations, combinations, placement. Basic formulas of the theory of probability. Repeated independent tests. Principles of probabilistic approaches to the problems of diagnosis and prognosis of diseases. **Basic of statistical analysis of biomedical data.** **Section contents:** Basic concepts of evidence-based medicine. Discrete and continuous random variables, numerical characteristics of random variables. Variational series. Basic distribution laws. Statistical hypotheses. Analysis of relationships.

Developers:

Senior Lecturer
Department of Medical Informatics and Telemedicine E.M. Shimkevich

Associate Professor
Department of Medical Informatics and Telemedicine T.V. Lyapunova

Associate Professor
Department of Medical Informatics and Telemedicine E.A. Lukyanova

Head of the Department
Department of Medical Informatics and Telemedicine V.L. Stolyar

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Chemistry**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Goals and objectives of the discipline	The objectives of the development of the discipline are: the formation of the system of knowledge about the structure of matter, the basic laws of chemical reactions, patterns in the chemical behavior of the main classes of inorganic compounds to use this knowledge as a basis for the study of the processes occurring in living organisms. The main objectives of the development of the discipline are: − strengthening students' awareness of the role of chemistry in modern technologies and processes of life; − formation of students' knowledge of basic chemical concepts and laws of chemistry; − training in the use of chemical knowledge in the study of related disciplines; − formation of students' practical skills required safe work in a chemical laboratory
Discipline summary	The subject of chemistry. Basic concepts and laws of chemistry. Classes of inorganic compounds. Fundamentals of chemical thermodynamics. The speed of a chemical reaction. Chemical equilibrium. The concepts of catalysis and adsorption. Solutions. Ways of expressing concentration of solutions. Preparation and standardization of solutions. The chemical reactions in solutions. Amphoteric electrolytes. pH. And heterogeneous ionic equilibrium in solution. Buffer solutions. Colloidal solutions. Introduction to electrochemistry. Galvanic cells. Corrosion of metals and alloys. Introduction to analytical chemistry. Qualitative analysis. Quantitative analysis. Physical and chemical analysis.

Developers:

Assistant Professor
Department of General Chemistry — Nevskaya E.Yu.

Head of the Department
Department of General Chemistry — Davydov V.V.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of discipline	**Biochemistry**
The amount of the discipline	**7 CU (252 hours)**
Course Description	
Topics	**Content of topics**
Introduction. Proteins: structure, properties, functions. Complex proteins, Nucleic acids, Enzymes	Biomolecules. The most important problems of current biochemistry. Methods of investigations *in* biochemistry. Biochemistry and Medicine. Structure and Function of Biomolecules. Proteins - essential constituents of the living cells. Physical and chemical properties of proteins. Composition and properties of amino acids and peptides. Four levels of structural organization of proteins. The three-dimensional structure of proteins; role of domains and the relationship of proteins structure to their biological functions. Methods of isolation and purification of proteins. Classification of proteins: simple and conjugated proteins, composition and properties of individual representatives of conjugated proteins. Nucleic acids. Chemical properties, composition, structure and biological role of DNA and RNA. Enzymes: general properties, chemical structure, active centers, classification and nomenclature, allosteric enzymes. The mechanisms of enzymatic catalysis. Structure and function of coenzymes, Kinetics of enzymatic reactions and methods for determination of the enzyme activity, Inhibitors of enzymes. Isoenzymes. Regulation of the enzyme activity. Diagnostic enzymology; enzymes as drugs.
Molecular mechanisms of regulation. Lipids: structure, properties, functions. Biological membranes. Hormones	Vitamins: distribution, biological role, classification. Social basis of vitamin deficiency in some developing countries. Principles of vitamin therapy. Antivitamins. Composition and properties of individual representatives of the fat-soluble and water-soluble vitamins: A, D, E. K, B1, B2, B6, B12, C, P, PP, H and Folic acid, Vitamin-like substances. Methods of quantitative determination of vitamins in the body. Hormones: hormone production in the endocrine glands. Molecular endocrinology. Mechanisms of hormonal regulation of metabolism and role of the second messengers. Chemical structure and properties of die main hormones. Hydrolysable lipids. Non-hydrolysable lipids. Biological roles. Fatty acids and fats. Structure of phospholipids and glycolipids. Isoprenoids. Sterols. Steroid hormones. Bile acids.
Energy metabolism. Carbohydrate metabolism	Catabolism and anabolism. Methods of metabolism investigations. Types of metabolism and its regulation. Free energy of ATP hydrolysis. Biological oxidation-reduction

	reactions, Chemistry of digestion. Social aspects of the rational nutrition problems. Carbohydrate metabolism: pathways of absorbed monosaccharaides. The pathway of glycogen synthesis and degradation. Anaerobic metabolism: glycolysis, glycogenolysis and gluconeogenesis. Aerobic metabolism: pentose phosphate pathway of glucose oxidation; oxidative decarboxylation. of pyruvate, the tricarboxylic acid cycle. Biological oxidation, The respiratory chain of electrons and protons transport, Oxidative phosphorylation. Energy effect of anaerobic pathways of carbohydrate metabolism. Hormonal regulation of carbohydrate metabolism. Pathology of carbohydrate metabolism,
Lipid metabolism	Lipid metabolism: pathways of the absorbed products lipid digestion, Mechanism of b-oxidation of fatty acids. Biosynthesis of fatty acids, triacylglycerols, phospholipids and cholesterol. Energy effect of lipid oxidation, Relationship between lipid metabolism and carbohydrate metabolism. Intracellular lipids and blood serum lipids. Regulation of lipid metabolism, Pathology of lipid metabolism.
Protein catabolism. Amino acid metabolism	Protein metabolism,' dynamic state of body proteins, Nitrogen balance. Problems of adequate, balanced nitrogen nutrition. Proteolysis. Absorption and active transport of ammo acids. Pathway of amino acids metabolism in the body: reactions of deamination, decarboxylation, transamination and hydroxylation. Degradation of tissue proteins. Urea cycle. Metabolism of individual amino acids. Regulation of protein metabolism, Pathology of protein metabolism, Relationship of protein metabolism with metabolism of lipids and carbohydrates.
Complex protein metabolism. Biochemistry of blood. Biochemistry of liver. Biochemistry of muscles. Biochemistry of kidney and urine	Metabolism of nucleoproteins and chromoproteins. Biosynthesis and decomposition of heme. Synthesis of purine and pyrimidine nucleotides; The biosynthesis of nucleic acids and proteins. Replication, repair, transcription. The role of biochemical research in medicine and the use of DNA technology. Blood: composition and functions. Cellular elements. Blood plasma: composition. Plasma proteins. Erythrocyte metabolism. Distribution of iron. Hydrogen ion concentration in the blood. Buffer systems in the plasma. Blood clotting. Fibrinolysis. Blood groups: the ABO system. Energy metabolism of the brain. Organization of skeletal muscle. Mechanism of muscle contraction. Control of muscle contraction. Functions of the kidneys. Urine formation. Organic components and Inorganic components of the urine.

Developers:

Associate professor, PhD
T.T.Berezov Department of Biochemistry O.M. Kuznetsova

Head of Department
T.T.Berezov Department of Biochemistry V.S.Pokrovsky

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Biology**
The amount of discipline	**7 CU (252 hours)**
Course Description	
Topics	**Content of topics**
Biology is the science of life. The cell as a structural and functional unit of living things	Methods which are used in modern biology. Structure of prokaryotic and eukaryotic cells. The cell theory. The flow of information and energy in the cell.
The genetic material	Structure and functions of nucleic acids. DNA replication. Mutations.
Gene expression. Organization of genomes	Transcription and translation. Control of gene expression in prokaryotic and eukaryotic cells. Organization of prokaryotic, eukaryotic and viral genomes.
The cytological basis for the growth and reproduction	Chromosomes, karyotypes. Gene, genotype, phenotype. Allelic and non-allelic, linked and non-linked, pleiotropic and lethal genes. Penetrance and expressivity. Types of gene interaction. The life cycle of cells, the mitotic and meiotic cell divisions. Control of the cell cycle. Types of reproduction. Ontogenesis.
The laws of heredity	The history of genetics. The laws of heredity.
Human genetics	Methods of human genetics. Hereditary diseases and their causes. Principles of diagnosis, treatment and prevention of hereditary diseases. Genetic counseling.
Medical Protozoology	Protozoa which infect humans. Life cycles, morphological features, host-parasite interactions, geographical distribution, reservoir hosts, methods of transmission and control, diagnosis and prevention of the diseases they cause.
Medical Helminthology	Phylum Plathelminthes (Trematoda and Cestoda), phylum Nemathelminthes (Nematoda). Worms which infect humans. Life cycles, morphological features, host-parasite

	interactions, geographical distribution, reservoir hosts, methods of transmission and control, diagnosis and prevention of the diseases they cause.
Medical importance of Arthropods	Phylum Arthropoda (Crustacea, Arachnida, Insecta). Medically important arthropods, their life cycles, morphological features, geographical distribution, diagnosis and prevention of the diseases they cause.
Biological evolution	Biological evolution. Theories of evolution.
The Humans and the Biosphere	Ecosystems. Medical aspects of environmental control.

Developers:

Associate professor
Department of Biology and General Genetics Gigani O.B.

Head of the Department
Department of Biology and General Genetics Azova M.M.

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SUMMARY OF THE ACADEMIC DISCIPLINE

Educational program

31.05.01 GENERAL MEDICINE (specialty level)

Name of the discipline	**ANATOMY**
Scope of the discipline	**12 credits (432 hours)**
Summary of the discipline	
Name of sections (topics) of the discipline	**Summary of sections (topics) of the discipline:**
Anatomy	Introduction to human anatomy. Basic anatomical concepts. Skeletal system: bone as an organ; classification, functions, development and structure of bones; structure of the bones of the skull, vertebrae, sacrum and coccyx, as well as the ribs, sternum, bones of the upper and lower extremities. System of joints: classification of bone joints; structure, development and classification of joints; connections of the skull and vertebral column, chest, belts and free parts of the upper and lower extremities. Muscle system: muscle as an organ; classification of muscles, their topography and auxiliary devices; muscles of the head and neck, back, chest and abdomen, diaphragm; muscles of the upper and lower extremities. Structure, development and functions of the digestive, respiratory, urinary, female and male reproductive systems, endocrine glands. Cardiovascular system: structure of heart, blood vessels small and big circles of blood circulation. Pathways of lymph outflow. Lymphoid system. Endocrine glands: structure, functions. Nervous system: Central part - brain and spinal cord; peripheral part-spinal nerve, cervical, brachial and lumbosacral plexus; cranial nerves. Innervation of the head and neck organs, the

	musculoskeletal system and the General body cover. Autonomous nervous system: innervation of internal organs. Anatomy of the sense organs: the organ of vision, the organ of hearing and balance, the organ of taste.

Developers:

Professor of the Department of Human Anatomy  V.I. Kozlov

Associate Professor of the Department of Human Anatomy  T.V. Kokoreva

Head of the Department of Human Anatomy  V. I. Kozlov

Program manager

professor of the Department of Nursing I.V. Radysh

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Life Safety**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Basic concepts of the discipline "Life Safety"	Definitions of main concepts of the discipline. The importance of the population safety in the development of Russia. Components of the study of life safety. Problems and prospects of life safety development.
Theoretical foundations of life safety	Characteristic systems of "man-habitat". Industrial, urban, household, natural environment. Human interaction with the environment. Fundamentals of optimal interaction
Risk	Risk assessment. Damage. The concept of risk.
Natural emergencies and protection of the population from consequences of emergencies	Geophysical, geological, meteorological, agrometeorological, marine hydrological hazards; natural fires. Characteristics of the damaging factors of the sources of natural emergencies. Characteristic factors of human environment. The influence of negative factors on a person's vital activity.
Man-made emergencies and protection of the population from their consequences	Man-made hazards and protection against it. Anthropogenic hazards and protection against it. Sources of environmental problems and its impact on humans. Fires, explosions, the threat of explosions; accidents with the release (threat of release) of emergency chemically hazardous substances (ECHS); accidents with the release (threat of release) of radioactive substances (RS); accidents with the release (threat of release) of biologically hazardous substances (BHS). Damaging factors of sources of man-made emergencies. Phases of the development of emergency situations.
World around. Dangers that arise in everyday life and safe behavior	World around and a human being, the nature of their interaction. A human being as an object and subject of security. Situations that arise in the process of human life. Features of the city as a habitat. High-risk zones in the city.
Life safety management	Organizing bases of the management of life safety. Legal bases of environmental quality management. Environmental quality management. Rationing of environmental quality.
Monitoring as a basis for managing the safety of human life	Types of monitoring: ecological, biosphere, social and hygienic. The use of environmental monitoring data in environmental quality management.

Harmful addictions and their social consequences	Computer addiction. The effect of alcohol on the human body. Drug addiction and substance abuse. Smoking and its impact on human health.
Basic principles of legal support of life safety for medical workers	The main legislative acts and regulations on guaranteeing the life safety of population. Legal bases of environmental and industrial safety. Protection of public health and safety. Responsibility for violation of regulatory legal acts on the population life safety
Providing first aid to the wounded in an emergencies	Cardiopulmonary resuscitation, stop bleeding, transport immobilization of victims's limbs

Developers:

Senior lecturer
Department of Technosphere Safety — Germanova S. E.

Assistant
Department of Disaster Medicine — Sokov R. S.

Director
Department of Technosphere Safety — Plushikov V. G.

Head of Department
Department of Disaster Medicine — Mitish V. A.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Histology, Embryology, Cytology**
The amount of the discipline	**7 CU (252 hours)**
Course Description	
Topics	**Contents of topics**
Introduction. Cytology.	The subject and tasks of Cytology and histology. Relationship of Cytology and Histology with medical disciplines. Methods for the preparations of the microscopic slides. Types of the microscopic slides. The technique of microscopy. Histological components. The cell. Organelles and Inclusions of the cell. The nucleus. The components of the nucleus. The cell cycle. Types of cell populations. Stem cells.
Basic Embryology. Human Embryology.	Germ cells. Meiosis. Fertilization, cleavage, gastrulation. Conceptions of determination, cell differentiation, morphogenesis. Induction interaction and directed migration of cells. Mesenchyme, ectoderm, endoderm. Provisory organs. Embryonic development of human. Placenta: formation, functions. Placental barrier. The system: mother-placenta-fetus, and the influencing factors.
Basic Histology	The concept of "Tissue". Classification of tissues, and their general characteristics. *Epithelia.* Differon: its structure and characteristic. Glands. Types of secretion. The system of the internal environment tissue. *Blood and lymph*. The hemogram and the differential leukocytes count. Age and sex features of blood. Physiological regeneration of blood and lymph. *Hemopoiesis. Immunity*. Immunocompetent cells. *Connective tissue*. Connective tissue proper. Skeletal tissues: cartilage, bone. Muscle tissues: smooth, and cross-striated (skeletal, cardiac). Muscle as organ. *Nerve tissue*. Nerve fibers: structure, types. Nerve endings. The concept of the reflex arc.
Systemic Histology	The sector is devoted to learning of development, morphologic structure, functions, innervation, blood supply, age-related features and regenerative capabilities of the human organs and system of organs. *The Nerve System*. Organs of the peripheral and central nerve system. *Sensory System* (Organs of Special Senses). The general principle of cellular organization of the receptor parts. The organ of vision. The olfactory organ. The organ of hearing and equilibrium. The organ of taste. *The Circulatory System.* Blood vessels: structure, classification. Arteries. Veins. The vessels of microvasculature. Lymphatic vessels. The heart. *The system of organs of hemopoiesis and immune defense*. The central and peripheral organs of

	hemopoiesis and immunogenesis. Red bone marrow, thymus, lymph nodes, spleen. Inflammation, healing, recovery. Immune responses. *The Digestive System*. The general principles of the structure of digestive canal. The oral cavity. The tongue. Lingual papillae. Lymphoid structures of the oral cavity. The glands of the oral cavity. Teeth. Pharynx and esophagus. Stomach. Small intestine. Large intestine. Appendix. Rectum. Pancreas. Liver. Gallbladder and bile ducts. *The Respiratory System*. The conductive portion and the respiratory portion. Nasal cavity, nasopharynx, larynx, trachea, the bronchial tree, the lung. Air-blood barrier. *The Integumentary System*. The skin. The skin' types. The skin' derivatives. Sebaceous and sweat glands. Hairs. Nails. *The Endocrine System*. The central and peripheral parts of the endocrine system. Hormones and their classification. The hypothalamus-hypophysis system. The adenohypophysis and neurohypophysis. The epiphysis. The thyroid gland. The parathyroid gland. The adrenal glands. Diffuse neuroendocrine system. *The Urinary System*. Kidneys. Nephron as functional-structural unit of the kidney. Filtration barrier. Endocrine apparatus of the kidney. The urinary tract. The urinary bladder. *The Reproductive Systems.* The male reproductive organs. Testis. Spermatogenesis. Prostate gland. The female reproductive organs. Ovary. Oogenesis. Uterus. Mammary Gland. The cyclic changes in the female reproductive system.

Developers:

Associate Professor
Department of Histology, Cytology and Embryology I.Z.Eremina

Head of the Department
Department of Histology, Cytology and Embryology T.Kh. Fatkhudinov

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Normal Physiology**
The amount of the discipline	**8 CU (288 hours)**
Course Description	
Topics	**Content of topics**
Physiology of the blood	Functions and composition of blood. Blood plasma. Corpuscular elements of blood, their functions. Leukocytes. Function of erythrocytes and blood hemoglobin. Blood groups. Rhesus factor. Blood clotting. Biophysical mechanisms. Clotting phases. The constancy of the internal environment (homeostasis). Blood constants.
Physiology of excitable tissues	Excitability and its parameters. Excitation. Characteristics of excitable tissues. Biophysics of membranes and muscle contraction. Properties of the nerve fiber, nerve. Physiology of the synapse. Muscle physiology. Skeletal muscle and its functions. Muscle strength. Types and mechanisms of muscle contractions. Fatigue and performance, the relationship between structure and function.
Physiology of the central nervous system. Physiology of the autonomic nervous system.	Reflex and its characteristics. The development of ideas about the reflex. Types of reflexes. Reflex regulation of visceral and somatic functions. General properties of the central nervous system. Coordination and integration into nutritive processes. Excitation and inhibition in the central nervous system. Basic properties of nerve centers. Private physiology of the central nervous system. Blood-brain barrier. Research methods of the central nervous system. Sympathetic, parasympathetic, metasympathetic NA and their functions. ANS synapses. The role of the ANS in the development of adaptive responses.
Physiology of higher nervous activity	Physiology of VND. Conditioned reflex, types, mechanisms of formation. Dynamic stereotype. Excitation and inhibition in the cerebral cortex. I and II signaling systems. Memory. Sleep, its mechanisms, phases. Motivation and emotion, social role. Motivation as the basis of personality. Sphere of consciousness,

	subconsciousness, superconsciousness . VNI methods and research .
Physiology of sensory systems	General properties of analyzer systems. The role of receptors and higher parts of the central nervous system in the perception of the external world. Physiology of vision. Physiology of hearing and vestibular apparatus. Skin analyzer. Taste and olfactory analyzers. Pain. The problem of pain in medicine. Pain perception mechanisms and pain relief.
Physiology of GI tract	General understanding of digestion. Digestive tract functions. Methods for studying digestive functions. Physiological bases of hunger and satiety. General principles of regulation of digestion processes. Motor and secretory functions of the digestive tract. Absorption of nutrients in the gastrointestinal tract. The role of the liver in digestion. Secretory function and digestion in various parts of the digestive tract.
Physiology of excretion	Excretory system. Mechanisms of urine formation. Non-urinary functions of the kidneys. The kidneys as an organ of homeostasis. Bladder and urination. Methods and studies of renal function. The role of the kidneys in the development of adaptive reactions of the body.
Physiology of the cardiovascular system	The cardiac cycle and its phases. Conductive system of the heart. The spread of excitement through the myocardium. Properties of the heart muscle. Phases of excitability. Extrasystole. Mechanisms of myocardial contractile activity. Nervous and humoral regulation of the heart. Research methods of the heart. Physiology of blood vessels. Basic laws of hemodynamics. Blood circulation in various parts of the vascular bed. Blood flow rate, blood pressure. Pulse. Microcirculation and lymph flow. Mechanisms of juxta and transcapillary blood flow. Mechanisms of lymph formation and exchange in interstitial spaces. Regulation of blood circulation. Vasomotor nerves. Hierarchy of vasomotor centers. Redistribution of blood. Blood flow research methods.
Respiratory physiology	External respiration. The role of the respiratory muscles. Change in pressure in the pleural cavity. Pulmonary volumes and capacities. Biophysics of gas exchange. Difference in partial pressures of gas in alveolar air, blood, tissues. Carriage of gases by blood. Oxygen transport mechanism. Dissociation curve of hemoglobin. Carrying out carbon dioxide. Respiration regulation. Breathing in changed environmental conditions. Features of breathing in the mountains. Deep diving breathing. Hypoxia and their manifestations.

Endocrine Physiology	Hormones, mechanisms of action. General properties of hormones, the hierarchy in the activity of WBC. Private physiology of endocrine glands: thyroid and parathyroid glands, adrenal glands, pancreas, sex glands. Mechanisms for the integration of physiological functions.
Metabolism and energy. Thermoregulation	The laws of thermodynamics. Biophysics of energy exchange. Entropy law. Entropic and nonentropic effects in organima. Basal metabolism and its determining factors. The exchange of proteins, fats, carbohydrates, vitamins and minerals. The arrival and consumption of substances in the body. Neurohumoral regulation of metabolism in the body. Physiological foundations of nutrition. Basic principles of the preparation of food rations. Body temperature and thermoreception .

Developers:

Associate Professor of the Department of Normal Physiology — Yu.P. Starshinov

Associate Professor of the Department of Normal Physiology — E.B. Yakunina

Head of the Department of Normal Physiology — V.I. Torshin

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Microbiology, virology**
The amount of the discipline	**8 CU (288 hours)**
Course Description	
Topics	**Content of topics**
General microbiology	The subject and tasks of Microbiology. Taxonomy and nomenclature of microorganisms. The morphology and chemical composition of microorganisms. Physiology and biochemistry of microorganisms. Genetics of microorganisms. Fundamentals of General and medical microbial ecology. Microbiological and molecular biological basis of chemotherapy of infectious diseases.
General virology	The structure of viruses, the interaction of viruses with cells, reproduction of viruses. Bacteriophages.
The doctrine of infection	Infectious disease. Stage of development and clinical manifestations of infectious diseases. The concept of sepsis, bacteremia, toxemia, septicopyemia. Bacteriocarrier process. The concept of pathogenicity and virulence of microbes. The main factors of pathogenicity. Units of virulence.
Special Microbiology	Medical bacteriology. Resident and pathogenic cocci: staphylococci, streptococci, Neisseria. Causative agents of respiratory infections: diphtheria, pertussis and parapertussis, tuberculosis and leprosy. Pathogenic and resident anaerobic bacteria: pathogens of gas gangrene, tetanus and botulism. The causative agents of zoonotic diseases: plague, tularemia, anthrax and brucellosis. The causative agents of intestinal infections: typhoid fever, dysentery, salmonellosis, echrishiosis, cholera and

	yersiniosis. Agent of spirochetosis. Pathogenic Rickettsia. The causative agents of chlamydiosis. Morphology and physiology of fungi. The causative agents of superficial and systemic mycosis. Mycoses caused by opportunistic fungi. Medical protozoology and Virology.

Developers:

Assoc. prof. of Department of Microbiology and Virology, PhD Ermolaev A.V.

Head of the Department of Microbiology and Virology, M.D., PhD Podoprigora I.V.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the disciplines	**Immunology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
The concept of immunity	Introduction to immunology. The concept of immunity. Subject and tasks of immunology. The history of immunology development. Types of immunity. Central and peripheral organs of the immune system and their functional organization
Antigens and allergens	Concept of antigenicity and allergenicity. Structure mantigens. Types of antigenic molecules: complete and partial antigens (haptens). Antigen properties of various chemical nature. Specificity antigens and its types. Penetration routes and elimination of antigens. Processing and presentation antigen. Fundamentals of Immunogenetics. NGA system immunity. Patterns and Toll Receptors
Types of immunity: congenital and acquired	Stem cell, role in the immune response, the origins of its proliferation and differentiation. Mechanisms and factors of innate immunity. Primary antigen recognition. Immunological tolerance and its types. Natural tolerance to its own antigens. Mechanisms for the development of tolerance. Artificial tolerance.
Phagocytosis reactions	The history of the discovery of phagocytosis. Phagocytic / antigen presenting cells. Mechanism of phagocytosis and the role of phagocytic reactions in immunity and intercellular cooperation.
Regulation of the immune response.	Interferon system. Structure, classification and role in immune responses. The value of interferons in anti-infectious and antitumor immunity. Complement system. Properties complement, role in the immune response, mechanisms activation of the complement system.
Allergic reactions	Classification of allergic / immunopathological reactions for cell and coombs. Features of development mechanisms of various types allergic reactions. Immunopathological processes with a different mechanism of development. Age features of the immune system are normal. Development mechanisms. The role of various chelation subpopulations of T-lymphocytes in regulation allergic reactions. Properties and role overproduction of IgE in case of allergic reactions. The

	main IgE-regulatory cytokines (IL4, IL.5, IL13, IL17). Mast cells and the role of their various mediators in the development of allergic reactions.
Anti-infectious immunity	The mechanisms of development of immune inflammation in infectious and parasitic diseases. Immunosuppressive options of Infectious agents. Effective anti-infective mechanisms.
Antitumor immunity	Tumor-specific antigens. The immune response to immunity. Antigens of tumors. Immunological surveillance and tumor growth. Immunodiagnosis of tumor growth. Immunological markers of tumors of various origins and localizations.
Reproductive immunology	Immunity during pregnancy. Humoral and cellular maintenance mechanisms immunity of embryonic alloantigens. The role of the HLA antigen system in the mother-fetus relationship. Immunological infertility and principles her immunodiagnostics.
Immunopathological processes	Classification and mechanisms of development of primary immunodeficiencies. Diagnosis of primary immunodeficiencies. The concept of the immune status.
Fundamentals of Immunorehabilitation.	Fundamentals of Immunorehabilitation. Immunomodulatory drugs. Vaccination.
Immunobiotechnology.	Modern trends and achievements immunobiotechnology. Hybrid technologies. Monoclonal antibodies. The main producers of monoclonal antibodies. Genetic engineering cytokines and anticytokines. Antireceptor antibodies. Modern immunobiotechnological vaccines.

Developers:

Professor
Department of Dermatovenereology and Allergology
with Immunology Course E.A. Levkova

Head of the Department
Department of Dermatovenereology and Allergology
with Immunology Course O.V. Zhukova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Pharmacology**
The amount of the discipline	**7 CU (252 hours)**
Course Description	
Topics	**Content of topics**
Recipe. General pharmacology	Formulation. The types of prescription drugs. Rules of prescribing. Basic principles of pharmacodynamics drugs. The basic principles of pharmacokinetics of drugs. Types of drug interactions.
Drugs affecting the afferent and efferent innervation	Drugs affecting the afferent innervation. Local anesthetics. Cholinergic means. Adrenomimetic and simpatomimeticakih funds. Adrenoliticheskoe and simpatoliticescoe funds. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs. взаимодействия групп ЛС.
Drugs affecting cardiovascular system	Diuretics. Lipid-lowering drugs. Antihypertensive drugs. Antianginal drugs. Anti-arrhythmic drugs. Drugs used in heart failure. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs.
Drugs influencing haemostasis and haematopoiesis	Drugs affecting the blood coagulation system. Drugs affecting the hematopoietic system. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs.
Medicines that affect the function of the respiratory system, digestive system and metabolism drugs influencing functions of the respiratory system	Drugs influencing functions of the digestive system. Hormones of the pituitary gland, hypothalamus, epiphysis, thyroid and pancreas. Hormonal preparations of steroid structure. Drugs affecting the immune processes. Anti-allergic medicines. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs.
Drugs affecting Central nervous system	Agent for anesthesia. Painkillers drugs. Sedatives. Hypnotics. Anxiolytics. Anti-epileptic means. Antipsychotics. Antidepressants. Drugs used in

	neurodegenerative diseases. The psychostimulants. Nootropic drugs. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs.
Antibacterial, antiviral and antifungal medicines	Antibiotics. Synthetic antimicrobial agents. Antiviral, antifungal medicines. TB funds. Antiprotozoal, drugs antisyphyllitic, a sedative. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions groups of drugs

Developers:

Assistant of the Department of
General and Clinical Pharmacology Butranova O.I.

Head of the Department of
General and Clinical Pharmacology Zyryanov S K.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Pathologic anatomy, clinical pathologic anatomy**
The amount of the discipline	**7 CU (252 hours)**
Course Description	
Topics	**Content of topics**
Pathologic anatomy of cells and tissues	Necrosis. Apoptosis. Intracellular accumulation: hyaline changes. Amyloidosis. Pathologic calcification (calcifications). Disorders of the metabolism of pigments (chromoproteins). Pigmentation disorders.
Pathologic anatomy of blood and lymph circulation disorders.	Disruption of water and electrolyte balance. Circulatory disorders: Shock. Hemostasis. Thrombosis. Ischemia. Infarction.
Pathologic anatomy of inflammation, healing and tissue repair.	Acute inflammation. Chronic inflammation.
Pathologic anatomy of the immune system.	Pathological conditions of the immune system. Hypersensitivity reactions. Transplant rejection. Autoimmunity and autoimmune disease. Immune deficiency syndromes.
Pathologic anatomy of compensatory and adaptive processes.	Atrophy. Hypertrophy. Hyperplasia. Regeneration. Types of tissue healing.
Pathologic anatomy of tumors.	Epithelial tumors. Mesenchymal neoplasms. Tumors of the bronchi and lungs. Tumors of the nervous system. Melanocytic tumors. Benign epithelial tumors and malignant tumors of the epidermis. Tumors of the mammary glands. Tumors that develop from the vessels. Diseases of the cervix. Diseases of the uterus and endometrium. Diseases of the ovaries. Ovarian cysts.
Pathologic anatomy of blood cells and bone marrow.	Hematopoietic tissue tumors (leukemia). Hodgkin's disease (Hodgkin's disease), non-Hodgkin's lymphoma. Anemia.
Pathologic anatomy of diseases of the cardiovascular system.	Atherosclerosis and arteriosclerosis. Hypertension and arteriolosclerosis. Cerebrovascular disease. Infarction (ischemic stroke) in the brain. Coronary heart disease (coronary heart disease). Hypertensive (hypertensive) heart disease. Diseases of the heart valves and holes and main arteries. Congenital heart defects.
Pathologic anatomy of the urinary system diseases.	Glomerular kidney disease. Acute glomerulonephritis. Nephrotic syndrome. Chronic glomerulonephritis. Renal amyloidosis.

Pathologic anatomy of diseases of the digestive system.	Hepatitis, alcoholic liver disease. Cirrhosis of the liver. Diseases of the stomach. Peptic ulcer disease. Diseases of the appendix.
Pathologic anatomy of infectious diseases of bacterial and mycotic nature.	General characteristics of infectious diseases. Typhoid and typhus fever. Diphtheria. Scarlet fever. Bacillary dysentery. Acute and chronic bronchitis, bronchiolitis. Bronchiectasis congenital and acquired. Bronchopneumonia. Lobar pneumonia. Epidemiology, etiology, patho- and morphogenesis of tuberculosis. Classification of tuberculosis. Morphological characteristics, clinical manifestations, complications, outcomes, causes of death in tuberculosis. Acquired syphilis (primary, secondary, tertiary). Morphology of congenital syphilis. Etiology, patho- and morphogenesis, clinical and morphological characteristics of the three forms of leprosy. Classification and general characteristics of fungal infections.
Pathologic anatomy of infectious diseases of viral nature.	Influenza. Measles.
Pathologic anatomy of parasitic diseases.	Malaria. Morphological features of falciparum malaria. Amebiasis. Trypanosomiasis. Leishmaniasis. Schistosomiasis (bilharzia). Echinococcosis.
Pathologic anatomy of quarantine infections and sepsis.	Plague, clinical and anatomical forms. Smallpox natural, pathological anatomy. Cholera. Three periods of the disease. Anthrax. Clinical forms depending on the pathways and clinical manifestations of infection. Systemic inflammatory response syndrome. Sepsis. Syndrome of multiple organ failure.

Developers:

Assistant Professor
Department of Pathologic Anatomy — Ivina A.A.

Head of the Department
Department of Pathologic Anatomy — Babichenko I.I.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Pathophysiology, Clinical Pathophysiology**
The amount of the discipline	**8 CU (288 hours)**
Course Description	
Topics	**Contents of topics**
General nosology. Environmental pathophysiology	The doctrine of health and disease, the concept of patho- and sanogenesis. Diseases of civilization, chronopathology.
Cell pathophysiology	Pathology of cell biomembranes and organelles; types and mechanisms of cell death; biorhythm disorders cells.
Typical pathological processes	Disorders of local blood circulation; inflammation; immunity, immunopathology, allergy. Pathophysiology tumor growth. Hypoxia.
Typical metabolic disorders substances	Violations of carbohydrate, fat, protein, purine metabolism, heat metabolism pathology organism; pathology of water-salt metabolism, edema; acid-base state of the body.
Extreme conditions	Pain, stress; shock; collapse; coma; clinical and biological death.
Pathophysiology of blood	Diseases of red blood; white blood diseases; hemorrhagic diathesis
Pathophysiology of the cardiovascular system	Arrhythmias; cardiac ischemia; complications myocardial infarction; heart defects; cardiomyopathy; myocarditis; endocarditis; pericarditis; heart failure. Pathophysiology of the vascular wall and tone
Respiratory pathophysiology systems	Respiratory failure; asphyxia; emphysema lungs; pulmonary edema; bronchial asthma; pneumothorax.
Pathophysiology digestive system	Peptic ulcer and duodenal ulcer; pathophysiology of the liver and biliary tract; pathophysiology of the pancreas; intestinal obstruction
Pathophysiology excretory system.	Nephrotic syndrome; acute and chronic diffuse glomerulonephritis; pyelonephritis; kidney stone disease; chronic renal failure; uremia; renal coma.
Internal pathology secretions	Pathophysiology of the hypothalamic-pituitary-adrenal system of the thyroid and parathyroid glands, parathyroid glands, thymus, pineal gland, gonads.
Pathophysiology of the nervous system and higher nervous activities.	Pathophysiology of functional neuroses; pathological reflexes; pathophysiology of disorders sleep; pathophysiology of memory impairment.

Developers:

Associate Professor
Department of General Pathology and
Pathological Physiology Named After V.A. Frolov — Goryachev V.A.

Head of the Department
Department of General Pathology and
Pathological Physiology Named After V.A. Frolov — Blagonravov M.L.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Topographic anatomy and operative surgery**
The amount of the discipline	**6 CU (216 hours)**
Course Description	
Topics	**Content of topics**
Topographic anatomy and operative surgery of the extremities	Topographic anatomy of the shoulder girdle areas, of the axillary region. Topographic anatomy of the arm, ulnar area, forearm, hand. Surgical anatomy of the shoulder joint, elbow joint, wrist joint. Topographic anatomy of the gluteal region, thigh, knee region, leg, calcaneal region, ankle joint region, foot. Surgical anatomy of the hip joint, knee joint, ankle joint. Surgical instruments. Basic operational techniques: separation of tissues, stop bleeding, put on and removal of skin nodes sutures, tying surgical knots. Primary surgical treatment of wounds of the body and limbs. Stop bleeding and restore blood flow. Vascular suture. Tendon suture. Nerve suture.
Topographic anatomy and operative surgery of the head, neck, thorax	Topographic anatomy and operative surgery of the head. Cranial vault. Meninges and intermembranous space. Face. Superficial and deep lateral face regions. Topographic anatomy and operative surgery of the neck. Fascias and cellular spaces of the neck. Submandibular triangle. Sternoclavicular-mastoid region. Carotid triangle. Scaleno-vertebral triangle. Lateral region of a neck. Surgical anatomy of the neck organs: esophagus, trachea, thyroid gland. Operations on the thyroid gland. Topographic anatomy and operative surgery thorax. Chest wall. The mammary gland. Topography of intercostal spaces. Thoracic cavity. Surgical anatomy of the lungs. Mediastinum. Surgical anatomy of organs of the anterior and posterior mediastinum. Surgical anatomy of the diaphragm. Breast surgery. Principles of surgical interventions on lungs, heart, esophagus.
Topographic anatomy and operative surgery of the abdomen, pelvis, perineum.	Anterolateral wall of the abdomen. Weak points of the anterior abdominal wall. Surgical anatomy of the inguinal canal. Surgical anatomy of the inguinal, umbilical and femoral hernias. Abdominal cavity. Peritoneum. Ligaments, burses, canals, sinuses, large and small epiploons.

	Surgical anatomy of organs of the upper abdomen: the stomach, duodenum, liver, gallbladder and extrahepatic bile ducts, spleen, pancreas. Surgical anatomy of organs of the lower floor of the abdominal cavity: the small intestine, large intestine. The back wall of the abdomen. Retroperitoneal space. Fascias and cellular spaces. Surgical anatomy of organs and neurovascular structures: the kidney, ureters, adrenal glands, abdominal aorta, inferior vena cava, thoracic duct. Topographic and anatomical aspects of surgical interventions on the anterior abdominal wall and abdominal organs. Operations on the abdominal organs. Revision of the abdominal cavity in penetrating wounds. Appendectomy. Operations on the stomach. Intestinal suture. Intestinal anastomoses. Suturing wounds of the stomach, small intestine and colon. Resection of the small intestine. Endoscopic surgery on the abdominal organs. Cholecystectomy. Appendectomy. Herniorrhaphy. Topographic anatomy and operative surgery of the pelvis. Fascias, cellular spaces. Surgical anatomy of organs of the male and female pelvis. Topographic anatomy of the perineum. Fascias, cellular spaces. Surgical anatomy of organs of the perineum in males and females. Operations on the pelvic organs.
Operative surgery	Surgical instruments. Basic operational techniques: separation of tissues, stop bleeding, put on and removal of skin nodes sutures, tying surgical knots.

Developers:

Associate Professor
Department of operative surgery
and clinical anatomy named for I.D. Kirpatovsky D.L .Titarov

Head of Department
Department of operative surgery
and clinical anatomy named for I.D. Kirpatovsky A.V. Protasov

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of discipline	**Hygiene**
The amount of the discipline	**7 CU (252 hours)**
Course Description	
Topics	**Contents of topics**
Theoretical and methodological foundations of the discipline "general hygiene". Public health and the environment.	General hygiene as a science and subject of instruction; sanitation; organization, forms and stages of the state sanitary and anti-epidemic supervision. Public health and the environment as a combination of natural, man-made and social factors. Features of the effect on the body of harmful environmental factors. Hygienic regulation and forecasting.
Air hygiene. Solar radiation.	Climate and human health. Hygienic aspects of acclimatization. The chemical composition of atmospheric air and its hygienic value. Solar radiation and its hygienic value.
Hygienic problems of populated areas. Hygiene of residential and public buildings.	Hygienic assessment of the layout of populated areas. Home Hygiene. Hygienic assessment of indoor microclimate. Hygienic assessment of the chemical composition of indoor air. Hygienic assessment of microbial pollution of indoor air. Hygienic assessment of room lighting.
Radiation hygiene	Radioactivity. Sources of radiation. Natural background radiation. Methods of radiometry of environmental objects. The dose of ionizing radiation. Dosimetry methods. Determination and hygienic assessment of radiation dose. Protection of the population from ionizing radiation
Nutrition and human health.	Hygienic basis of nutrition. Features of rational nutrition of various population groups. Hygienic bases of the organization of therapeutic nutrition. Dietary and preventive nutrition. Sanitary and hygienic examination of products. Nutritional and biological value of animal products. Sanitary and hygienic assessment of milk and dairy products. Nutritional and biological value and signs of spoilage of products of plant origin. Sanitary and hygienic examination of bread. Food preservation methods. Sanitary and hygienic examination of canned food and concentrates. Food safety. Food poisoning and their prevention. Sanitary and

	hygienic examination of projects of catering establishments
Hygiene water and water supply. Soil hygiene, cleaning of populated areas. Sanitary protection of reservoirs.	Water as an environmental factor, its hygienic and epidemiological significance. Hygienic assessment of water sources. Rationing of the qualitative composition of drinking water. Methods for cleaning, disinfection and methods for improving the quality of drinking water. Disinfection of drinking water under centralized water supply and in field conditions. Soil as an environmental factor. The role of soil in the transmission of endemic, infectious and parasitic diseases. Soil pollution and self-cleaning. Hygienic assessment of soil quality. Hygienic bases and requirements for cleaning populated areas. Sewerage of populated areas and sanitary protection of water bodies.
Occupational health and worker health	Basics of occupational health and workers' health. The physiological basis of the labor process. Hygienic assessment and prevention of physical factors of the working environment. Hygienic assessment and prevention of the effect of industrial aerosols. Hygienic assessment and prevention of the influence of chemical and biological factors of the working environment. Labor hygiene in agriculture. Occupational health in the health care system
Features of the planning and functioning of preschool and school institutions. Hygiene of children and adolescents. Healthy lifestyle.	Hygienic assessment of the health and physical development of children and adolescents. Hygienic requirements for the layout, equipment, maintenance and operation of children's institutions. Healthy lifestyle and personal hygiene issues.

Developers:

Associate Professor
Department of Public Health, Health Care and Hygiene N. A. Drozhzhina

Head of the Department
Department of Public Health, Health Care and Hygiene
Professor A.V. Fomina

RUDN University

Institute of Medicine

COURSE ANNOTATION

Educational program

General Medicine

Course name	***Public Health and Healthcare, Healthcare Economics***
General labor intensity	**5 credits (180 hours)**
Contents of the discipline	
Name of the discipline section	**The summary of topics (topics) of the discipline:**
Theoretical and methodical foundations of the discipline "Public Health and Healthcare", state policy in the field of public health.	Public health and health care as a science and subject of teaching. Brief history of public health. Legal basis of public health in the Russian Federation. Methods of studying the patterns of the formation of public health and the activities of health services. Health care in foreign countries. International cooperation in the field of health.
Public health: the concept, study, assessment of indicators and determinants of public health.	Medical demography. Medico-social aspects of demographic processes. Morbidity, disability and physical development.
Fundamentals of medical statistics and organization of medical and social research. Statistical analysis.	Fundamentals of Medical Statistics. Organization (stages) of medical and social research. Statistical methods of processing the results of medical and social research.
The organization of medical and preventive care for the population and the functioning of the main health subsystems.	Organization of treatment and preventive care for the population. Primary health care. Out-patient assistance to the population. Organization of inpatient medical care. Emergency care. Socio-hygienic importance of the major diseases and the organization of treatment and preventive care with them. Organization of health care for workers in industrial enterprises, construction and transport. Organization of medical care for the rural population. System of maternal and child health protection. Organization of state sanitary and epidemiological surveillance. The organization of sanatorium-and-spa help. Medicinal assistance to the population. Provision of health care facilities with medical equipment and instruments. Quality management of medical care. Examination of temporary and permanent disability.
The problems of health preservation, disease prevention, family health and medical ethics.	The problems of disease prevention and health promotion. Participation of public organizations in the protection of public health. Family as an object of medical and social research and primary health

	care. Medical ethics and deontology, bioethical problems of medicine.
Fundamentals of health economics and health insurance. Management of health care and medical personnel.	Fundamentals of health management. Fundamentals of Economics, Planning and Financing of Health. Marketing in health care. Fundamentals of social and health insurance. Training of medical personnel.

Head of the Department of
Public health, Healthcare and Hygiene,
Professor A.V Fomina

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Epidemiology**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Contents of topics**
General epidemiology. Epidemiological method and evidence-based medicine. Epidemiological studies.	Short history of the epidemiology development. Epidemiological method (analysis). Establishing an epidemiological diagnosis. The kinds of epidemiological research.
Epidemic process. Epidemiological surveillance.	L.V. Gromashevsky's role in the study about the epidemic process – three interconnecting elements: a source of infection, a mechanism of transmission and a susceptible organism. Indicators of the epidemic process. Antiepidemic measures. The basis of preventive measures organization. Levels of prevention. The epidemiological surveillance as a subsystem of the social-hygienic monitoring (SHM).
The study about natural niduses. Sapronotic infections.	The definitions: "natural nidus", "anthropogenic nidus". The role of wild, semisinanthropic and sinanthropic mammals (rodents, insectivores, ungulates, predators), birds in the formation of natural and anthropogenic nidi. The main principles of epizoological-epidemiological surveillance.
Disinfection, sterilization.	The definition of disinfection. Types of disinfection: prophylactic and nidal (current and final). Disinfection specificities for respiratory infections, enteric infections and extremely dangerous infections. Presterilization cleaning of medical, including stomatological, things. Control of presterilization cleaning. Sterilization. Control of sterilization quality.
Immunoprophylaxis of infectious diseases.	Definition of immunoprophylaxis. Theoretical basis of immunoprevention. The schedules of immunoprophylaxis in the world. Active and passive immunoprophylaxis. Post-exposure immunoprophylaxis.
Infectious disease epidemiology. Epidemiology of socially	The content of this section is defined by the actual epidemic situation and calendar plan of study course of infectious

significant infections.	diseases. Epidemiological characteristics of socially significant infections. Organization of antiepidemic and preventive measures in niduses of infection diseases.
Epidemiology and prophylaxis of nosocomial infections.	Definition of nosocomial infections. Epidemiological, economic and social significance of hospital infections. Contributors of hospital infection emergence and distribution. Antiepidemic regime in medical institutions. Prevention of nosocomial diseases in medical staff. Post-exposure prevention of HIV, hepatitis viruses (B, C, D).
Epidemiology of emergency situations.	Definition of the “emergency situation”. Classification of catastrophes. Basic principles of medical aid and epidemic control organization in the area affected by an emergency.

Developers:

Assistant
Department of Infectious Diseases
with Epidemiology and Phthisiology Courses A.V. Siritsa

Head of the Department
Department of Infectious Diseases
with Epidemiology and Phthisiology Courses G.M. Kozhevnikova

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Medical Rehabilitation**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Organizational and methodological foundations of rehabilitation	Definition of the concept of rehabilitation. The concepts of violations, restrictions of vital activity, social insufficiency. Types of rehabilitation, its goals and objectives. Medical rehabilitation. Habilitation. Rehabilitation program. Rehabilitation potential. Rehabilitation prognosis. Principles of the organization of the rehabilitation process. Stages of medical rehabilitation. Organizational approaches and staffing of the rehabilitation process.
Medical aspects of disability	The concepts of a disabled person, disability. The concept of "restriction of vital activity". Primary, secondary, and tertiary physical disabilities. Classification of disability. Disability groups. Features (risk groups) of persons with disabilities of the body.
Means and methods of medical rehabilitation	Means of medical rehabilitation. Medical support of the rehabilitation process. Means of psychological rehabilitation. Technical means of rehabilitation. Reconstructive surgery. Physical therapy. The concept of physical therapy. External physical factors used in physical therapy. Natural and preformed therapeutic factors. The mechanism of therapeutic action of physiotherapy. General contraindications. Safety precautions when working in the physiotherapy department (office). Classification, types and forms of physical therapy. Classification of motor modes. Ergotherapy Basics of medical massage. Basic techniques. Indications and contraindications. Fundamentals of reflexology. The mechanism of therapeutic action. Methods of reflexology. Features of reflexotherapy in the elderly, senile age and centenarians. The mechanism of therapeutic action and methods of hirudotherapy. The mechanism of the therapeutic effect of phytotherapy. Features of the method of phytotherapy. The mechanism of therapeutic action of apitherapy. Indications, contraindications. The mechanism of therapeutic action of aromatherapy. Methods of aromatherapy. Indications, contraindications. Climatotherapy. Climatic conditions resorts. Aerotherapy. The mechanism of therapeutic effect of aerotherapy. Methods. Heliotherapy. The mechanism of therapeutic action

	of heliotherapy. Forms of conducting heliotherapy sessions. Indications, contraindications. Thalassotherapy. The mechanism of therapeutic action of thalassotherapy. The concept of "cold load". Indications, contraindications for thalassotherapy. Speleotherapy. The mechanism of therapeutic action of speleotherapy. Indications, contraindications. Peloidotherapy. Classification of peloids. The mechanism of therapeutic action of peloid therapy. Methods. Indications, contraindications. Balneotherapy. The mechanism of action of balneotherapy. Types of balneotherapy. Indications and contraindications. Rules for consumption mineral waters.

Developers:

Associate Professor
Department of Anesthesiology and Resuscitation
with Medical Rehabilitation Course — Moroz V. A.

Head of Department
Department of Anesthesiology and Resuscitation
with Medical Rehabilitation Course — Petrova M. V.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Clinical pharmacology**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
1. General issues of clinical pharmacology.	1.1. Subject and tasks of clinical pharmacology. Clinical research. Principles of evidence-based medicine. 1.2. Fundamentals of clinical pharmacodynamics. 1.3. Fundamentals of clinical pharmacokinetics. 1.4. Drug interactions. 1.5. Drug safety. Adverse drug reactions. 1.6. Principles of efficacy and safety assessment of drugs. Fundamentals of rational pharmacotherapy (P-drug and P-treatment).
2. Specific issues of clinical pharmacology.	2.1. Clinical pharmacology of drugs affecting main functions of myocardium. 2.2. Clinical pharmacology of drugs affecting vessels. 2.3. Clinical pharmacology of lipid-lowering drugs and metabolism modifiers. 2.4. Clinical pharmacology of drugs affecting hemostasis and hemopoiesis. 2.5. Clinical pharmacology of drugs affecting lung functions. 2.6. Clinical pharmacology of drugs affecting GIT. 2.7. Clinical pharmacology of drugs applied in treatment of kidney disorders. 2.8. Clinical pharmacology of drugs applied in endocrinology. 2.9. Clinical pharmacology of anti-inflammatory drugs. 2.10. Clinical pharmacology of drugs applied in treatment of immune system disorders and allergic conditions.

	2.11. Clinical pharmacology of anti-infectious drugs. 2.12. Clinical pharmacology of psychoactive drugs.

Developers:

Professor of Department
of General and Clinical Pharmacology S.B. Fitilev

Associate Professor of Department
of General and Clinical Pharmacology A.V. Vozzhaev

Associate Professor of Department
of General and Clinical Pharmacology I.I. Shkrebniova

Head of Department
of General and Clinical Pharmacology S.K. Zyryanov

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The discipline	**Dermatovenereology**
Duration of the discipline	**3 CU (108 hours)**
Content of the discipline	
Topics	**Content of topics**
General dermatology	
Anatomy, physiology, histology of the skin.	The contents of study: Blood network of the skin. Cutaneous receptors. The innervation of the skin. Appendages of the Skin: hair, nails, glands. Functions of the skin. The structure of the skin. The structure of the epidermis. Structure of the dermis. The cellular structure of the skin. The fibers of the skin. Main histopathological processes in the skin.
Elements of the rash.	The contents of study: Primary elements of the rash. Evolution of the elements. The structure of the elements. Classification of the elements. Polymorphic and monomorphic rash. Secondary elements of the rash. The mechanism of formation. Classification. Tackling and regression.
Examination of dermatologic patients.	Course contents: Value of questioning. Allergies, history of the disease. Examination of the skin and visible mucous membranes. Evaluation of subjective sensations. Carrying out diagnostic tests and samples, revealing the pathognomonic symptoms. Laboratory and instrumental methods of diagnosis.
General principles of diagnosis and treatment. Means of external therapy	Course contents: The most commonly used groups of drugs. Means of external therapy. Physiotherapy treatments. Phytotherapy. Spa treatment
Private dermatology	
Infectious, viral, parasitic skin diseases.	Course Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Specifities in children. Differential diagnosis. Principles of diagnostics, treatment and prevention.
Psoriasis, lichen planus, pityriasis rosea	Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Differential diagnosis. Principles of diagnosis, treatment and prevention
Dermatitis, eczema, toxicoderma, Angioedema, urticaria.	Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Peculiarities in children. Differential diagnosis. Diagnostic principles

	of treatment and prevention.
Bullous skin diseases.	Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Peculiarities in children. Differential diagnosis. Diagnostic principles of treatment and prevention.
Erythema multiforme	Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Peculiarities in children. Differential diagnosis. Diagnostic principles of treatment and prevention.
Lupus erythematosus	Content: Etiopathogenesis. The clinical picture. The main symptoms and syndromes. Differential diagnosis. Diagnostic principles of treatment and prevention.
Venerology	
Syphilis	Learning Content: The general classification. Aetiological agent. Epidemiology. Contributing factors. The incubation period. Pathogenesis. Classification of primary syphilis. The main clinical manifestations of primary syphilis The concept of decapitated syphilis. complications Differential diagnosis. Classification of secondary syphilis. A variety of cutaneous manifestations. Differential diagnosis. Classification of visceral syphilis. Neurosyphilis. Cutaneous manifestations Tertiary syphilis. Classification of congenital syphilis. Classification of early congenital syphilis. Possible signs of fetal syphilis. Significant signs of fetal syphilis. Possible signs of congenital syphilis in infants. Significant signs of congenital syphilis in infants. Significant signs of late congenital syphilis. The complex is the standard serological tests. Treponemal and non-treponemal tests. Modern tests. Types of treatment for syphilis. Immunity in syphilis. Reinfection and superinfection.
Gonorrhea	Training contents: Determining of the disease, aetiological agent, ways of infection, the incubation period. Classification. Clinical manifestations. Complications of gonorrhea in men. Gonorrhea in women. The course of gonorrhea among girls. Ophthalmia. Prevention methods. Laboratory diagnosis of gonorrhea. Methods for the treatment of gonorrhea. The criteria for cure gonorrhea. Provocations. Prevention of gonorrhea.

Developers:

Head of the academic part,
Assistant of the Department of Skin and Venereal Diseases A.L.Savastenko

Head of Department of the Skin and Venereal Diseases, prof. O.V. Zhukova

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Neurology, Medical Genetics, Neurosurgery**
The amount of the discipline	**6 CU (216 hours)**
Course Description	
Topics	**Contents of topics**
Module 1 Topical diagnostics and semiotics of diseases nervous system	Study of motor functions. Study functions of motor cranial nerves: III, IV, V, VI, VII, IX, X, XI, XII. Syndromes of defeat. Exploration of the surface and deep sensitivity. Research methods and symptoms damage to the senses - sight, hearing, smell, taste. Symptoms and research methods for aphasia, apraxia, agnosia. Symptoms and methods of coordination research movements. Research methods and symptoms of damage extrapyramidal system. Vegetative research nervous system. The main syndromes of defeat brain and spinal cord. 9. Somatoneurological and neurosomatic syndromes. Paraclinical methods research.
Module 2. Vascular diseases brain and spinal cord	Acute disorders of cerebral circulation. Chronic and transient brain disorders blood circulation. Spinal vascular disease brain. Treatment of vascular diseases of the central nervous system. Principles rehabilitation.
Module 3 Infectious and parasitic diseases of the nervous system	Bacterial meningitis (meningococcal, pneumococcal, recurrent bacterial, etc.etc.). Serous meningitis, tuberculous meningitis, Abscess of the brain. Thrombosis of the cerebral sinuses. Encephalitis (tick-borne, mosquito, epidemic, herpetic, influenza, rheumatic). Echinococcosis, neurocystecyrcosis, schistosomiasis, trypanosomiasis, toxoplasmosis, malaria. Neurospeed. Neurosyphilis.
Module 4. Peripheral diseases of the nervous system	Polyneuropathies: toxic (alcoholic), dysmetabolic (diabetic), hereditary (neural amyotrophy of Charcot-Marie-Toes). Neuralgia trigeminal nerve. Facial nerve neuropathy. Tunnel neuropathies of peripheral nerves
Module 5. Chronic and chronic progressive diseases	Amyotrophic lateral sclerosis. Myasthenia gravis. Syringomyelia .
Module 6. Hereditary degenerative diseases of the nervous system	Progressive muscular dystrophies. Myotonia and myotonic syndromes. Paroxysmal myoplegia. Down's disease, Klinefelter's, Shereshevsky-Turner.
Module 7. Demyelinating diseases of the nervous system	Multiple sclerosis. Multiple encephalomyelitis. Opticomyelitis. OVDP, KVDP.

Module 8. Vegetative endocrine diseases. Neuroses	Migraine, tension headache. Cluster headache.
Module 9. Epilepsy and convulsive syndromes. Fainting	Epilepsy, classification, clinical picture, diagnosis treatment. Paroxysmal conditions.
Module 10. Neurosurgery	Examination methods in neurosurgery. Tumors central of the nervous system. Vascular diseases of the brain in neurosurgery. Cranial injury.

Developers:

Associate Professor
Department of Nervous Diseases and Neurosurgery Nozdryukhina N.V.

Head of Department
Department of Nervous Diseases and Neurosurgery Chmutin G.E.

Federal State Autonomous Educational Institution of Higher Education
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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Psychiatry, Medical Psychology**
The scope of the discipline	**5 CU (180 hours)**
Course Description	
Topics	**Content of topics**
General psychiatry	Psychiatry: definition, branches of psychiatry, types of psychiatric care. Methods of treatment of mental illnesses. Classification of mental illnesses. Disorders of sensations, disorders of sensory synthesis. Perceptual disorders. Classification, clinical manifestations. Disorders of the associative process. Types of delusions according to content. Delusions, classifications. Overvalued ideas. Obsessions, classification. Delusions of persecution. Delusions of greatness. Depressive delusions. Symptoms of emotional (affective) disorders. Symptoms of memory impairment. Asthenic syndrome: symptomatology, stages. Delusional syndromes. The paranoiac syndrome. Hallucinatory-paranoid syndrome. The Kandinsky-Clerambo syndrome. Paraphrenic syndrome. Cotard syndrome. Syndrome of dysmorphophobia-dysmorphomania. Emotional (affective) syndromes. Manic syndrome. Depressive syndrome. Types of depressions. Types of emotional syndromes. Apathic syndrome. Catatonic syndrome. Amnestic syndrome. Korsakov's syndrome. Catatonic-gebefrenic syndrome. Psycho-organic syndrome. Dementia: varieties. Disorders of consciousness. Depersonalization: varieties. Disorders of sensory synthesis. Paraphilias. Phobic syndrome. Types of obsessions.
Psychopathology. Categories of mental disorder.	Oligophrenia: definition, classification, methods of treatment and rehabilitation. Mental disorders in neurosyphilis: varieties, methods of diagnosis, treatment and rehabilitation. Epilepsy: definition, clinical manifestations, methods of diagnosis and treatment. Paroxysmal disorders in epilepsy: classification. Non-paroxysmal disorders in epilepsy. Mental disorders in the lesions of cerebral vessels: varieties, clinical manifestations, methods of treatment. Mental disorders in cerebral atherosclerosis, clinical manifestations, Mental disorders in hypertensive disease. Presenile (involutional) psychoses. Alzheimer's disease. Mental disorders in atrophic diseases of the brain. Alcoholism. Addiction. Substance abuse. Mental disorders in infectious diseases. Mental disorders in AIDS. Mental disorders in somatic diseases. Psychosomatics: definition. Varieties of psychosomatic pathology. Mental disorders in craniocerebral trauma. Schizophrenia: definition, the main symptoms and syndromes of mental disorders in schizophrenia. Bipolar affective disorder. Psychogenic disorders. Reactive psychosis. Neuroses. Post-traumatic stress disorder: definition, clinical manifestations, methods of treatment. Personality disorders (psychopathy). Anorexia nervosa and bulimia nervosa.

Treatment of mental disorders	Methods of treatment of mental illnesses. Psychotropic drugs: definition, classification. Psychotherapy: definition, basic methods of psychotherapy. Neuroleptics: definition, classification, spectrum of psychotropic action of neuroleptics. Varieties of psychomotor agitation. Methods of arresting psychomotor agitation. Tranquilizers. Definition, classification, spectrum of psychotropic effects, side effects. Antidepressants: Definition, classification. Complications and side effects in the treatment of antidepressants. Nootropics: definition, Mechanism of action, indications and adverse effects of basic nootropic drugs, side effects of nootropics. Psychostimulants, normotimics: Mechanism of action, indications and adverse effects and complications. Anticonvulsants. Epileptic status: definition, clinical manifestations, basic methods of treatment. Treatment of epilepsy: principles, basic anticonvulsants. Basic principles of treatment and rehabilitation of patients with schizophrenia. Basic principles of treatment and rehabilitation of patients with affective psychoses. Basic principles and stages of treatment of patients with chronic alcoholism. Treatment of patients with neuroses. Basic psychotropic drugs, methods of psychotherapy. Treatment of patients with anorexia nervosa and bulimia nervosa. Treatment of post-traumatic stress disorders. Diagnosis, types of treatment and rehabilitation of patients with mental disorders due to craniocerebral trauma.
Medical Psychology	Tasks and goals of the work of a medical psychologist in the clinic of internal diseases, in a psychiatric clinic. Methods of pathopsychological study. Methods and types of psychological psychotherapy. Abnormalities in mental activity in organic diseases of the brain. Disorders of memory in organic diseases of the brain. Features of impairment thinking in schizophrenia. Features of the emotional sphere and thinking in personality disorders. Features of the work of a psychologist with oncological patients. Features of mental performance in patients with eating disorders. Features of thinking, emotions and memory in patients with epilepsy. Technique of memorizing 10 words. Method "Pictogram". Methodology "Classification of objects". Features and objectives of using psychometric scales in the clinic of internal diseases and psychiatric clinic. Methodology of "Exception of excess"

Developers:

Associate professors of the Department
of Psychiatry and Medical Psychology — M.S. Artemyeva

Associate Professor of the Department
Psychiatry and Medical Psychology — I.E. Danilin

Head of the Department
of Psychiatry and Medical Psychology — I.V. Belokrylov

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Otorhinolaryngology**
The amount of the discipline	**4 CU (144 hours)**
Course Description	
Topics	**Content of topics**
Research methods of ENT – organs.	1. Research methods of ENT – organs: anterior rhinoscopy, posterior rhinoscopy, pharyngoscope, otoscopy.
Pathology of the nose and paranasal sinuses.	Acute and chronic diseases of the nasal cavity. Injuries of the nose and paranasal sinuses. Nosebleeds. Foreign body of the nasal cavity and paranasal sinuses. Inflammatory diseases of the paranasal sinuses.
Pathology of the pharynx.	Angina, complications of angina. Chronic tonsillitis. Foreign body of the pharynx. Adenoids.
Pathology of the ear.	Diseases of the external ear. Acute middle ear infections. Mastoiditis. Chronic diseases of the middle ear. Diseases of the inner ear.
Pathology of the larynx.	Acute and chronic diseases of the larynx. Tracheotomy.
Tumors of the ear and upper respiratory tract.	Tumors of the ear and upper respiratory tract.
Specific diseases of upper respiratory tract.	Specific diseases of upper respiratory tract.

Developers:

Associate Professor
Department of Otorhinolaryngology — I.A. Korshunova

Head of Department
Department of Otorhinolaryngology — V.I. Popadyuk

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Ophthalmology**
The amount of discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Introduction	1.1. The history of ophthalmology. 1.2. The main tasks of General practitioners; the problem of ocular morbidity and blindness. 1.3. Evolution of the vision organ and the development of the human eye.
Anatomy	2.1 Three parts of the visual analyzer. Anatomy of the orbit. 2.2 Protective apparatus of the eye. Conjunctiva. 2.3 Lacrimal organs. Tear secrection and evocuation. 2.4 Tunics of the eyeball. Vitreous body.
Examination of the anterior and posterior segments of the eye	3.1 examination of the eye with the side light and in transmitted light. The basics of biomicroscopy. Gonioscopy. 3.2 Normal eye fundus. 3.3 the technique of skiascopy. 3.4 the technique of ophthalmoscopy.
Methods of examination of eye function	4.1 Central and peripheral vision. 4.2 changing of the vision fields. 4.3 visual field defects. Blind spot. 4.4 colour vision. Disorders of color perception. 4.5 Light perception. Light adaptation.
Visual acuity. Refraction. Accomodation.	5.1 Opticsystem of the visual organ. 5.2 Visual acuity. 5.3 Physical and clinical refraction. 5.4 Accommodation and convergence.
Clinic refraction. Astigmatism. Presbyopia. Optic correction of refractive errors	6.1 refractive errors. Correction. 6.2 Astigmatism, its types, principles of correction. 6.3 Presbyopia, principles of correction. 6.4 refractive surgery.
Binocular vision. The strabismus.	7.1 Binocular vision. 7.2 Strabismus, types. Reasons. 7.3 Amblyopia. Classification. 7.4 treatment of strabismus.
Diseases of eyelids, lachrymal organs, of the orbit.	8.1 Diseases of the eyelids. Congenital anomalies of the eyelids. 8.2 Diseases of the lachrymal organs. Differential diagnosis. The methods of treatment. 8.3 Diseases of the orbit. Tumors of the orbit.
Diseases of the conjunctiva	9.1 Acute infectious conjunctivitis. Classification. Treatment. 9.2 Chronic conjunctivitis. Classification. Treatment.

	9.3 Allergic conjunctivitis. Classification. Treatment. 9.4 Degenerative changes the conjunctiva. Tumors of the conjunctiva. Treatment.
Diseases of the cornea and sclera	10.1 General symptomes of cornea diseases. Exogenous keratitis. 10.2 Endogenous keratitis. Etiology, clinical symptomes, treatment. 10.3 corneal ulcer. Etiology, clinical picture, treatment. 10.4 Avitaminoses of the cornea. 10.5 Outcomes of keratitis. Treatment of keratitis and their consequences. 10.6 Sclerites. The clinical symptomes.
Diseases of the vascular tunic	11.1 Iritis. Iridocyclitis. Clinical picture, diagnostics, treatment. 11.2 Chorioretinitis. Clinical picture, diagnostics, treatment. 11.3 Degenerative changes in the vascular tunic. Congenital anomalies. 11.4 Tumors of the vascular tunic. Diagnosis. Treatment.
Diseases of the retina and optic nerve	12.1 Retinite. Retinal changes in the cases of systemic diseases. The clinical picture. Treatment. 12.2 Degenerative changes of the retina. The clinical picture. Treatment. 12.3 Inflammatory and not inflammatory diseases of the optic nerve. Features of the clinical picture. Treatment. 12.4 Congenital anomalies and tumors of the retina and optic nerve. Features of diagnostics and treatment.
Glaucoma	13.1 Definition of glaucoma. Normal and elevated IOP, 13.2 Etiology, pathogenesis and classification of glaucoma. 13.3 Acute attack of glaucoma. Features of the clinical picture. Treatment. 13.4 Absolute glaucoma. The clinical picture. Treatment. 13.5 Early diagnosis of glaucoma. Methods of treatment of glaucoma.
Diseases of the crystalline lens. Prevention and treatment	14.1 Definition of cataract. Classification of cataracts. Link cataracts development with systemic diseases. 14.2 Modern principles of treatment of cataract. 14.3 Diseases of the vitreous body.
Damage to the organ of vision and their prevention. Organization of eye care	15.1 the Causes and classification of eye injuries. Damage to the eyelids. 15.2 Blunt trauma of the eye-ball. Trauma of the orbit. Diagnosis. Treatment. 15.3 eye burns. Classification. The methods of treatment. 15.4 Organization of eye care. vision disability

Eye diseases in tropical countries	17.1 features of ocular pathology in countries with a tropical climate. Classification of eye diseases in tropical countries. Ofthalmogerpesa (main types). 17.2 ophthalmomyiasis. Treatment, prevention. 17.3 Changes of the eye in general diseases. Treatment. 17.4 the eye diseases in cases of vitamins' deficiency, animals's and plants's poisons
Introduction	1.4. The history of ophthalmology. 1.5. The main tasks of General practitioners; the problem of ocular morbidity and blindness. 1.6. Evolution of the vision organ and the development of the human eye.

Developers:

Associate Professor of the Department of Eye Diseases	Ph.D., Frolov A.M.
Senior lecturer of the Department of Eye Diseases	Ph.D., Kazakova K.A
Head of the Department of Eye Diseases	MD., Professor Frolov M.A

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Forensic Medicine**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Contents of topics**
Module 1 Procedural and institutional issues of forensic medical examination. Examination of the scene of crime and cadaver examination on the accident scene	Particular module - Definition of forensic medicine. Forensic medicine and forensic medical examination. The prominent scientists in forensic medicine in Russia and abroad, their contribution to the development of theory and practice of forensics. The structure of the forensic medicine in Russia. Particular module - The rights and responsibilities of a forensic expert. Types of forensic expertise. Objects of forensic medical examination. Forensic medical examination at the preliminary investigation and in court. Forensic documentation. Particular module - General issues of the cadaver examination on the accident scene (examination order, organization, stages and kinds of the examination of the accident scene). The task of forensic medical expert and the order of a cadaver examination on the accident scene. Procedural documentation of accident scene. The features of a cadaver examination in different kinds of death. The features of an unknown person examination. The features of examination of large-scale catastrophe scene.
Module 2. Forensic thanatology	Particular module - The definition of death. Terminal conditions. The definition of clinical and biological death. Establishing of the time of death. Diagnostics of death. Early cadaveric changes. Late cadaveric changes. Natural conservation of a cadaver. Artificial embalming of a cadaver. The destruction of a cadaver by insects, animals and plants. Deliberate destruction of a cadaver. Methods of body restoration. Forensic significance of cadaveric changes. The definition of cause of death. Competitive causes of death. Category of death, genus of death; violent death: murder, suicide, accident death. Particular module - Establishing of the time of death.

Module 3 Forensic medical examination of the damage caused by blunt solid objects.	Particular module – General issues of forensic traumatology. The main issues to be solved during the forensic medical examination of mechanical damage. Particular module -forensic medical diagnostics of the lifetime and prescription of the injury Particular module - forensic medical examination of injuries caused by blunt hard objects. Particular module-forensic examination of falling from height. Particular module - transport injury. Particular module - Forensic examination of injuries caused by sharp tools Particular module - Forensic medical examination of gunshot injuries.
Module 4. Forensic-medical examination of living people. Forensic medical examination of the gravity of the health damage.	Particular module – Forensic medical examination of living persons. Legal qualification of the gravity of health damage (severe, medium, light). Ways to cause damage to health (beating, torment, torture). The examination of general and professional ability loss. Forensic documentation. Particular module – Forensic medical examination of sexual crimes, examination of former pregnancy, childbirth. Particular module- Forensic medical examination in criminal and civil cases of professional offenses of medical workers. Professional and official crimes of medical workers. Commission and complex forensic medical examinations.
Module 5. Forensic medical examination (the examination of a cadaver).	Particular module - The reasons for forensic medical examination of a cadaver. The tasks of the forensic medical examination of a cadaver in case of violent death. Guidelines and instructions on the organization and proceeding of the examination. Rules and technique of autopsy. Exhumation and examination of exhumed cadavers. Taking the samples of biological material for laboratory research. The documentation of forensic medical examination. Principles of construction of a forensic medical diagnosis and conclusions based on forensic medical examination of a cadaver. The design of a death certificate. Particular module – Definition of sudden death. Forensic medical diagnostics and causes of sudden death. Sudden death caused by physical strain and emotional stress. Laboratory methods of examination in case of sudden death.
Module 6. Laboratory methods in forensic medicine. Forensic personal identification	Particular module-Examination of physical evidence of biological origin (blood, semen, saliva, hair). Methods of identification, removal and packaging of traces and physical evidence of biological origin. Particular module - Methods of personal identification. Identification of the person in emergency situations (disasters). Particular module - medical and forensic identification of the injury instrument.

Module 7. Forensic medical examination in case of mechanical asphyxia. The examination of a newborn baby cadaver	Particular module – General characteristic of lifetime mechanical asphyxia. Signs of asphyxia in external and internal cadaver examination. Classification of mechanical asphyxia. Particular module – Hanging. Strangulation with a loop. Strangulation with hands. Compression of chest and abdomen. Obturative asphyxia: closing of nostrils and mouth, closing of airways by alien bodies, powder-like substances, vomit, blood. Drowning and its types. Changes in the body caused by water and the estimation of the duration of its stay in water. Death in spaces of limited volume. Particular module - The examination of a newborn baby cadaver. Its reasons. The definition of infanticide. Features a forensic medical examination of a cadaver. The questions to be solved due to such examination. Birth trauma. Active and passive infanticide.
Module 8. Forensic medical examination of poisonings	Particular module – General toxicology: Poisons and poisonings. The condition for the action of poisons. Classification of poisons. Laboratory methods of investigation used in case of poisoning. Forensic chemical examination in case of poisoning and the assessment of its results. Particular module - Particular toxicology: Poisoning with acids, alkalis, destructive, haemotropic and functional poisons. The poisoning with ethyl alcohol and its surrogates. Drugs poisonings. Bacterial and non-bacterial food poisoning.
Module 9. Forensic medical examination of death due to the influence of physical factors	Particular module - Damage from the action of high temperature Particular module - Damage from the action of low temperature. Particular module - Damage from the action of electricity. Particular module - Radiation trauma and damage from changes in barometric pressure.
Module 10. Forensic medical diagnostics in cases of sudden death	Particular module – the pathogenesis of sudden death. Particular module – diseases of the cardiovascular system, central nervous system, respiratory and digestive diseases.

Developers:

Assistant Lecturer
Department of Forensic Medicine — Asiya R. Bashhirova

Head of Department
Department of Forensic medicine — Dmitriy V.Sundukov

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Disaster Medicine**
The amount of the discipline	**4 CU (144 hours)**
Course Description	
Topics	**Content of topics**
Disaster Medicine service	Disaster Medicine service. Tasks and fundamentals of the organization of the Unified State system of prevention and liquidation of emergency situations. Tasks, organizational structure and fundamentals of the All-Russian disaster medicine service.
Protection in emergencies. Organization of medical and sanitary support for the evacuation of the population	Protection in emergencies. Organization of protection of the population in emergencies. Medical protection of the population in an emergency. Organization of medical and sanitary support for the evacuation of the population. Preparation of a medical and preventive institution for work in an emergency. Organization of medical assistance to the population in an emergency. Organization of medical and evacuation support of the population in an emergency. Management of the Disaster Medicine Service. Medical and sanitary support in the elimination of the consequences of an emergency of a man-made (anthropogenic) nature. Medical and sanitary support in the liquidation of natural emergencies (natural disasters). Organization of sanitary and hygienic and anti-epidemic support in emergency situations. Measures for the localization and elimination of foci of infectious diseases and the focus of infection with biological agents. Organization of medical supply of formations and institutions intended for medical and sanitary provision of the population in an emergency. Preparation of medical supply facilities for work in emergency situations.
Life-threatening conditions and providing medical assistance to the wounded in emergencies	Life-threatening conditions and providing medical assistance to the wounded in emergencies. General characteristics of life-threatening conditions. Acute respiratory failure. Acute cardiovascular insufficiency. Shock. Coma. Resuscitation measures and intensive care in emergencies. Bleeding. Blood loss. Compensation for blood loss. Methods and means of anesthesia at the stages of medical evacuation. Immobilization in case of damage. Transport immobilization. Therapeutic immobilization at the stages of medical evacuation. Soft tissue injuries. Ischemic lesions of the extremities. Injuries to the bones and joints of the extremities.

	Closed and open damage. Uncomplicated spinal injuries. Spinal injuries with impaired spinal cord function. Injuries to the abdomen and pelvis. Abdominal injuries. Injuries to the pelvic bones. Damage to the pelvic organs. Chest injuries. Closed uncomplicated breast injuries. Complicated injuries and injuries to the chest. Injuries to the head and neck organs. Traumatic brain injury. Maxillofacial injuries. Damage to ENT organs. Eye damage. Injuries to the organs of the neck. Thermal lesions. Thermal burns. Cold injury. Polytrauma (multiple, combined, combined lesions). General principles of providing assistance to those affected with polytrauma. Multiple and combined lesions. Combined lesions. Radiation and chemical damage. Radiation damage. Damage caused by emergency chemical hazardous substances (ECHS).

Developers:

Associate Professor
Department of Disaster Medicine — Paskhalova Yu. S.

Head of Department
Department of Disaster Medicine — Mitish V. A.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Propaedeutics of Internal Diseases**
The amount of discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Methods of physical examination of the patient	General condition, consciousness, position, antropometry, skin and mucus layers, lymphatic nodes, muscular system, joints
Examination of a patient with lung diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (pneumonia, COPD, bronchial asthma)
Examination of a patient with cardiovascular diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (arterial hypertension, coronary heart disease, heart failure, atherosclerosis, rheumatic fever, valvular heart diseases)
Examination of a patient with gastrointestinal tract diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (gastritis, ulcer, bowel diseases)
Examination of a patient with liver diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (hepatitis, cirrhosis, cholecystits, gall stone disease)
Examination of a patient with kidney diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (pyelonephritis, glomerulonephritis, chronic renal failure, chronic kidney disease, acute kidney injury)
Examination of a patient with hemopoietic organs diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (anemia, leukemia)

Examination of a patient with endocrinologic disorders	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (thyroid gland diseases, diabetes mellitus)

Developers:

Assistant of the Department of Internal Medicine
with a course of cardiology and functional diagnostics — Avdoshina S. V.

Head of the Department of Internal Medicine
with a course of cardiology and functional diagnostics — Kobalava Zh. D.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Diagnostic Radiology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Introduction into diagnostic radiology. Methods of X-ray/radiological examination.	Modern kinds of irradiation for diagnostics. X-rays. Irradiation from isotopes. Ultrasound and MRI. Their nature and properties.
X-ray examination of respiratory organs	The significance of X-ray methods in medicine. Fluorography. Fluoroscopy. X-ray examinations – PA, lateral and oblique. Lungs on X-ray image. Tomography. General view X-ray examination. Examinations with contrast media. Lobes and segments of the lungs on X-ray image.
General X-ray semiotics of lung disease	Opacity, limited shadow and transparency in lung pattern. Dissemination. Deformation and increase of lung pattern. Hilum broadening
Particular X-ray semiotics of lung disease	Foreign bodies. Ribs fracture. Pneumothorax. Haemothorax. Lung emphysema. Polycystosis.
Lung cancer. Classification. X-ray-morphological classification.	Clinical and X-ray classification. Morphological classification and localization. Central cancer Peripheral cancer. Atelectasis. Pleuritis. Metastases to medistinum.
Apical form of lung cancer. Mediastinal form of lung cancer. Miliary carcinomatosis. Secondary (metastatic) lung cancer.	Pancoast tumor – apical lung cancer, its X-ray picture. Involvement of mediastinum in the undetected primary tumor. X-ray picture of miliary carcinomatosis. All kinds of shadows on the lung in metastatic cancer.
Pleuritis.	Metastatic pleuritis. Reactive pleuritis. Shadow of pleuritis. Level of liquid. Homogenous intensive shadow.
X-ray examination of cardiovascular system.	Native X-ray. Contrast examination. Angiography. Angiopulmonography. Multislice CT.
X-ray semiotics of the diseases of cardiovascular system	X-ray examination in heart defects, diseases of the aorta. Coronarography in coronary arteries' stenosis.

X-ray examination of digestive tract	General X-ray image of the abdomen. Contrast examination of the digestive organs. Multislice CT and MRI.
Particular X-ray semiotics of digestive tract diseases, including cancer.	X-ray of stomach and duodenum. Esophagography. Enterography. Irrigoscopy. Duodenography. Polyposition examination. Double contrast. Ulcers, cancers of the stomach, esophagus and duodenum. X-ray diagnostics of colorectal carcinoma. Contrast examination of the bile ducts.
X-ray examination of skeletal system	Peculiarities of the bones X-ray image in children. Methods of X-ray examinations of bones and joints. Tomography. Fistulography. Multislice CT and MRI in bone diseases.
X-ray examination of skeletal system's diseases	Malformations. Change of the bones' shape and size. Osteoporosis. Destruction. Sequester. Periostitis. X-ray examination in traumas. Diagnostics of fractures. Osteochondrosis. Bone tumors. Bone sarcomas.
Chest X-ray in X-ray room.	Chest X-ray. Chest fluorography. Tomography.
X-ray examination of patients with digestive organs' diseases in X-ray room	X-ray examination of the esophagus and stomach. Polyposition examination. Double contrast examination of the colon.
Radiation oncology	Installations for radiotherapy. Topometry. Methods of radiotherapy. Radiotherapy from 1 field and multiple fields. Distant radiotherapy, intra-tissue irradiation.
Credit test in the testing and oral form according to Mark-rating system.	

Developers:

Associate Professor
of the Department of Oncology and Roentgen-Radiology Baryshnikov V.L.

Professor,
of the Department of Oncology and Roentgen-Radiology Parkhomenko R.A.

Head of the Department of Oncology and Roentgen-Radiology Kaprin A.D

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Faculty Therapy**
The amount of the discipline	**8 CU (288 hours)**
Course Description	
Topics	**Content of topics**
Analysis of scheme of medical history	Patient care.
Pneumonia. Tuberculosis. Lung cancer. Pleurisy	Features of the modern classification, diagnosis and course of pneumonia. Complications. Pleural lesions (pleurisy, hydrothorax, pneumothorax). Differential diagnosis. Antibiotic therapy depending on the type of pathogen.
Bronchial asthma	Etiology. Pathogenesis. Clinical forms. Asthmatic status. Diagnostics. Treatment.
Chronic obstructive pulmonary disease. Respiratory failure	Etiology. Pathogenesis. Clinic. Respiratory failure. Pulmonary hypertension. Chronic pulmonary heart. Treatment.
Rheumatism. Heart condition. Pericarditis	The main manifestations. Mitral heart defects. Diagnostics. Treatment.
Infectious endocarditis	Aortic malformations. Heart failure. Extra-cardiac manifestations. Features of the course of modern infectious endocarditis. Diagnostics. Treatment.
Cardiomyopathy. Heart failure	Subaortic stenosis. Etiology. Pathogenesis. Clinic. Acute heart failure, chronic heart failure. Diagnostics. Treatment.
Coronary heart disease	Risk factors. Forms of angina pectoris. Diagnostics. Tests with physical activity: types, methods of conducting, indications and contraindications, interpretation. Treatment. Rhythm and conduction disorders.
Acute coronary syndrome	Etiology. Pathogenesis. Typical and atypical forms. Classification, types of myocardial infarction. Diagnostics. Complications. Treatment.
Hypertension	Diagnosis, classification, stratification by the risk of developing cardiovascular complications. Secondary hypertension. The clinical picture. Course. Diagnostics. Treatment.
Diabetes mellitus	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Nephritis	Glomerulonephritis. Classification. Principles of diagnosis and therapy. Pyelonephritis. Amyloidosis.

Acute kidney injury. Chronic kidney disease	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment. Renal replacement therapy.
Peptic ulcer of the stomach and duodenum	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Hepatitis	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Cirrhosis of liver. Alcoholic illness	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Diseases of the small intestine	Malabsorption syndrome (celiac disease, sprue, Whipple's disease, Crohn's disease).
Diseases of the large intestine	Non-specific ulcerative colitis. Acute colitis. Irritable bowel syndrome.
Diseases of the thyroid gland	Diffuse-toxic goiter. Hypothyroidism. Thyroiditis.
Diseases of the joints	Rheumatoid arthritis. Differential diagnosis with ankylosing spondylitis, deforming osteoarthritis, gout
Anemia	Iron deficiency anemia. B12-deficiency anemia. Hemolytic anemia.
Acute leukemia. Chronic leukemias. Lymphomyeloid leukemia	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Treatment.

Developers:

Associate Professor
Department of Internal Diseases with the course of Cardiology
and Functional Diagnostics named after the acad. V. S. Moiseev Goryaeva L. A.

Head of Department
Department of Internal Diseases with the course of Cardiology
and Functional Diagnostics named after the acad. V. S. Moiseev Kobalava Zh. D.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Professional Diseases**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Professional pathology of the respiratory system. Pneumoconiosis.	In each section of the discipline "occupational diseases" is a study of the etiology, pathogenesis, clinic, differential diagnosis, clinical and labour forecast, current methods of examination, treatment, prevention of occupational diseases, principles of organization and conduct of medical examinations of industrial workers, questions of examination of working capacity, medical check-ups. Occupational diseases, diagnosis and prevention. Pneumoconiosis, classification. Asbestosis, anthracosis, siderosis of welders, aluminosis, berylliosis. Dust bronchitis. Pneumoconiosis from exposure to organic dust. Occupational bronchial asthma. Bronchiolithys.
Vibration disease. Noise disease (chronic sensorineural hearing loss)	VIBRATION DISEASE. NOISE DISEASE (Chronic occupational NEUROSENSORY DEAFNESS): Clinical picture of the disease associated with the exposure to local vibration and the combined effect of local and General vibration. The stage of the disease, diagnosis, treatment, prophylaxis, prognosis.
Occupational diseases of musculoskeletal system	Occupational DISEASES of MUSCULOSKELETAL system: due to physical strains and micro-traumas, of the workers of industrial enterprises and agricultural industries. Arthralgia, arthrosis, polyarthritis, aseptic bone necrosis, bursitis, tendovaginitis, psoriasis, periarthritis of the shoulder joint, epicondylitis of the shoulder, professional polyneuritis and radiculitis.
Poisoning in the home	POISONING IN the home: Classification. Methods of diagnostics. The main clinical syndromes. General principles of emergency treatment: prevention of further contact with the poisons of its absorption, the elimination of the poison from the body, antidotes, treatment of syndromes associated with intoxication. Acute poisoning by carbon monoxide, of amido - and nitro compounds, alcohol, hypnotics and tranquilizers, acids and alkalis. Intoxication by chemical substances

	used in agriculture. Classification of pesticides according to purpose of application, chemical structure, pathway of exposure. Acute and chronic toxicity of chlorine and organophosphorus compounds, organic mercury compounds, aromatic hydrocarbons (benzene).

Developers:

MD, Associate Professor
Department of Hospital Therapy
with courses of Endocrinology, Hematology
and Clinical Laboratory Diagnostics — M.R. Aleksandrova

Head of the Department
Department of Hospital Therapy
with courses of Endocrinology, Hematology
and Clinical Laboratory Diagnostics
Professor — N.D. Kisliy

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program

31.05.01 General Medicine

The name of the discipline	**Hospital Therapy**
The amount of the discipline	**10 CU (360 hours)**
Course Description	
Topics	**Content of topics**
Cardiology	In each section of discipline "Hospital therapy" is a study of the etiology, pathogenesis, clinic, differential diagnosis, modern methods of examination and treatment of patients on the following topics. In the section of CARDIOLOGY: hypertension, secondary hypertension, acute coronary syndrome, myocardial infarction, coronary and noncoronary cardialgia, arrhythmias and conduction heart, acquired valvular heart disease, pericarditis, cardiomyopathies (hypertrophic, dilated, restrictive), myocarditis, infectious endocarditis, acute and chronic heart failure, atherosclerosis and dyslipidemia.
Pulmonology	In the section of PULMONOLOGY: acute bronchitis and chronic obstructive pulmonary disease, interstitial and infiltrative lung disease, bronchial asthma, lesions of the pleura (pleurisy, hydrothorax, pneumothorax, chronic respiratory failure, acute respiratory failure and acute respiratory distress syndrome, adult syndrome, pulmonary hypertension, chronic pulmonary heart, the sleep apnea syndrome.
Nephrology	In the section of NEPHROLOGY: pyelonephritis, acute and chronic glomerulonephritis, acute kidney injury and chronic kidney disease.
Hematology	In the section HEMATOLOGY: acute leukemia, chronic myeloid and lymphoproliferative disease, Hodgkin's lymphoma, iron deficiency anemia, anemia of chronic disease, megaloblastic and aplastic anemia, coagulopathy, paraproteinemic hemoblastosis.
Rheumatology	In the section of RHEUMATOLOGY: rheumatoid arthritis, systemic sclerosis, antiphospholipid syndrome, systemic lupus erythematosus, periarteritis nodosa, dermatomyositis, acute rheumatic fever and chronic rheumatic heart disease, gout, osteoarthritis.

Gastroenterology	In the section of GASTROENTEROLOGY: gastroesophageal reflux disease, functional dyspepsia and chronic gastritis, gastric ulcer and duodenal ulcer, diseases of the small and large intestine, syndrome of maldigestion and malabsorption syndrome, chronic pancreatitis, chronic hepatitis, cirrhosis, jaundice, chronic cholecystitis and biliary dyskinesia, alcoholic liver disease.
Clinical laboratory diagnostics	In the section of CLINICAL LABORATORY DIAGNOSTICS: fundamentals of organization of laboratory service. The field of research, pathological and non-pathological variations of laboratory results, stages, laboratory studies, molecular genetic diagnostics, genetic studies in the diagnosis and prognosis of the development of multifactorial diseases, pharmacogenetics

Developers:

MD, Associate Professor
Department of Hospital Therapy
with courses of Endocrinology, Hematology
and Clinical Laboratory Diagnostics M.R. Aleksandrova

Head of Department
Department of Hospital Therapy
with courses of Endocrinology, Hematology
and Clinical Laboratory Diagnostics
DMS, Professor N.D. Kisliy

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Endocrinology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics:**
1. Diabetes mellitus. 2. Diseases of the thyroid. 3. Diseases of the hypothalamus 4. Obesity. Metabolic syndrome. 5. Disorders of calcium metabolism. 6. Diseases of the adrenal glands.	**Diabetes mellitus**, etiology, pathogenesis, classification, clinics. Basic methods of diagnosis and treatment. Late complications: Retinopathy, Nephropathy, Diabetic neuropathy, angiopathy, Diabetic foot. Acute complications of Diabetes mellitus: differential diagnosis and treatment of diabetic ketoacidosis (DKA), nonketotic hyperosmolar coma, lactic acidosis and hypoglycemic coma. **Thyroid disease**. Goiter|: endemic and sporadic. Graves' disease. Hormonal and radioisotope studies, thyroid scan, thyroid ultrasound. Thyrotoxic crisis. Endocrine ophthalmopathy. Hypothyroidism. Hypothyroid coma. Acute suppurative thyroiditis. Subacute thyroiditis (de Quervain). Chronic fibrous thyroiditis (Riedel goiter). Autoimmune thyroiditis. **Hyper and hypoparathyroidism**. Primary and secondary osteoporosis. **Diseases of the hypothalamic-pituitary system**. Cushing's disease: etiology, classification, the clinical picture. Laboratory and instrumental diagnostics. Ectopic ACTH-syndrome. Cushing disease. Hypothalamic syndrome in pubertal period. Acromegaly. Diabetes insipidus. **Obesity. Metabolic syndrome**. Adrenal disease. Primary hypocorticism. Acute adrenal insufficiency. Primary hyperaldosteronism (Kone syndrome). Pheochromocytoma. Catecholamine crisis.

Developers:

Professor, DMS
Department of Hospital Therapy
with Courses in Endocrinology, Hematology
and Clinical Laboratory Diagnostics — I.A. Kurnikova

Head of the Department
Department of Hospital Therapy
with Courses in Endocrinology, Hematology
and Clinical Laboratory Diagnostics
Prof., DMS — N.D. Kisliy

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Infectious Diseases**
The amount of the discipline	**9 CU (324 hours)**
Course Description	
Topics	**Content of topics**
Speciality introduction	Theory of the general pathology of infectious diseases. Medical care of patients with infectious disease. Ward rounds. Medical case history analysis.
Air borne infectious diseases	Influenza and other acute respiratory viral infections. Meningococcal infection. Diphtheria. Infectious mononucleosis. Legionellosis. Mycoplasma infection. Herpetic infection.
Gastro-intestinal infectious disease	Typhoid fever, paratyphoid A, B. Dysentery. Cholera. Viral gastroenteritis. Amebiasis. Foodborne diseases. Salmonellosis. Botulism. Pseudotuberculosis. Yersiniosis. Enterovirus infections. Viral hepatitis A. Viral hepatitis E.
Blood borne infectious diseases	Rickettsiosis. Typhoid fever Brill-Zinsser disease. Endemic (flea) typhus. Systemic tick-borne borreliosis (Lyme disease). Malaria.Tick-borne typhoid fever.
Integumentary manifestations of infectious diseases	Viral hepatitis B. Viral hepatitis D. Viral hepatitis C. Viral hepatitis G. HIV infection. Erysipelas
Control test	Control test
Zoonoses	Plague. Tularemia. Hemorrhagic fevers. Anthrax. Tetanus. Rabies. Brucellosis. Chlamydial infection, Ornithosis. Ku fever. Leptospirosis. Protozoa, Visceral leishmaniasis. Protozoa, Trypanosomiasis.
Syndrome diagnosis. Emergency conditions in infectious diseases.	Syndrome of jaundice, Differential diagnostics. Diarrheal syndrome. Differential diagnostics. Meningeal syndrome. Differential diagnostics. Respiratory syndrome. Differential diagnostics. Exanthemes and enanthems in infectology. Differential diagnosis of rashes. Emergency conditions in infectious diseases. Hypovolemic shock. Meningitis. Edema is the swelling of the brain.

Helminthiases (worm infections)	Ascaridosis. Trichocephalosis. Enterobiosis. Ankylostomidosis. Strongyloidosis. Trichinosis. Filariatosis.

Developers:

Associate Professor
Department of Infectious Diseases
with courses of Epidemiology and Phthisiology S.L. Voznesenskiy

Head of Department
Department of Infectious Diseases
with courses of Epidemiology and Phthisiology G.M. Kozhevnikova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Phthisiology**
The amount of the discipline	**4 CU (144 hours)**
Course Description	
Topics	**Contents of topics**
History of tuberculosis studies.	History of tuberculosis studies. Stages of organizational anti-tuberculosis events. International organizations' anti-tuberculosis activities. Current state of the tubercular epidemics worldwide and in the Russian Federation
Etiology and pathogenesis of tuberculosis	Characteristic of MBT. Ways and means of tuberculosis infection. Etiology and immunity. Pathological anatomy of tuberculosis
General methods of patient examination	Objective examination of the patient with tuberculosis. Laboratory methods of identification of MBT in pathological material. Methods of determination of MBT resistance to antitubercular drugs. Tuberculin Testing. Performance of Mantoux Test, interpretation of the results. Radiological methods of diagnostics. Broncological examination of patients with tuberculosis Laboratory research of blood test, urine, pleural and cerebrospinal fluids.
Classification of tuberculosis	Principles of clinical classification of tuberculosis and international classification of diseases and causes of death
Treatment of tuberculosis	The drugs used in tuberculosis treatment. Standard tb treatment regimens. Elimination of side reactions at chemotherapy. MDR-tuberculosis treatment. Collapsotherapy and surgical methods of treatment. Treatment tactics of patients with tb complications. Treatment of lung hemorrhages and spontaneous pheumothorax
Tuberculosis and the concomitant diseases/states	Tuberculosis, HIV and AIDS. Lung tuberculosis and diabetes mellitus. Tuberculosis and chronic nonspesific lung diseases. Tuberculosis and alcoholism. Tuberculosis and cardiovascular diseases. Tuberculosis and lung cancer. Tuberculosis and liver diseases. Tuberculosis and stomach and duodenum ulcer. Tuberculosis and pregnancy.

	Neuropsychic disorders at tuberculosis
Organization of fight with tuberculosis	Logistics of health care delivery to tuberculosis patients in the Russian Federation. Regulations of health care delivery to tuberculosis patients in the medical organizations. Antitubercular dispensary. Specific prevention of tuberculosis. Vaccination. Chemoprophylaxis. Social and sanitary prevention of tuberculosis

Developers:

Professor
Department of Infectious Diseases
with courses of Epidemiology and Phthisiology V.N. Zimina

Head of Department
Department of Infectious Diseases
with courses of Epidemiology and Phthisiology G.M. Kozhevnikova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Polyclinic Therapy**
The amount of the discipline	**8 CU (288 hours)**
Course Description	
Topics	**Content of topics**
Organization of the work of outpatient clinics. Organization of the local therapist and general practitioner work.	The general principles of the organization of the outpatient clinics. Organization and content of work of therapeutic department clinics. Organization of the local therapist and general practitioner. The concept of standards (protocols) the management of patients in outpatient conditions. Standards (protocols) of patients with the most common diseases in the practice of the therapist. General and specific issues of examination of temporary disability. The procedure for referral to medical and social expertise. Disability.
Diseases and syndromes common in outpatient therapist and general practitioner. Primary and differential diagnosis, patient management tactics. Urgent Care. Indications for hospitalization. Treatment. Examination of disability. Clinical supervision. Rehabilitation. Spa treatment.	Fever and low-grade fever in outpatient practice. Differential diagnosis. Management of patients. Interpretation of blood count in outpatient practice, highlighting the main syndromes and initial diagnosis. Anemic syndrome. The interpretation of urinalysis. Urinary Syndrome. Urogenital diseases in general practice. Respiratory diseases in outpatient practice. Diseases of the circulatory system in the outpatient practice. Diseases of the digestive system in the outpatient practice. Endocrine, nutritional and metabolic disorders in outpatient practice. Articular syndrome in outpatient practice. Somatoform disorders in general practice. Headache syndrome in general practice. The role of the doctor's clinic in detecting cancer. Keeping cancer patients at different stages of the disease. Alcohol poisoning and alcoholic disease in the practice of the local therapist. Iatrogenic illness in outpatient practice. Drug-induced diseases.

Features of the course and treatment of somatic diseases in people of different age and gender groups in outpatient practice.	Features of the course and treatment of somatic diseases in people of different age groups in outpatient practice. Features of the course and treatment of somatic diseases during pregnancy and problem therapist clinics in the conduct of normal pregnancy. Requirements for the organization of outpatient reception and recording and reporting of different age and social groups.
Methods of drug and non-drug therapy in outpatient practice. Preventative work at polyclinics.	Rational antibiotic therapy in outpatient practice. Diet therapy in GP. Diseases prevention activity in outpatients care.

Developers:

Professor Assistant (Docent)
Department of General Practice E.I. Rusanova

Head of the Department
Department of General Practice N.V. Sturov

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of discipline	**General Surgery**
Volume of discipline	**6 CU (216 hours)**
Course Description	
Topics	**Content of topics**
General surgery issues	Bleeding, blood loss. Blood products and components Blood transfusion complications. Asepsis. Asepsis. Antisepsis. Bleeding. Hemotransfusion. Preoperative and postoperative periods. Operation. Wounds. Burns. Burn disease. Frostbites. Necrosis. Ulcers. Fistulas. Plastic surgery. Principles of surgical oncology. Local anesthesia. Novocaine blocks. Special diagnostic methods in surgery.
Particular issues of surgery	Local and General reaction of the body to infection Surgical sepsis. Principles of treatment of purulent infection Purulent diseases of soft tissues (furuncle, carbuncle, hydradenitis, erysipelas, abscess, phlegmon). Acute inflammation of lymphatic and venous vessels (lymphangitis, lymphadenitis, acute thrombophlebitis). Purulent inflammation of parotid glands and breast (acute parotitis, acute mastitis). Acute paraproctitis. Purulent diseases of fingers and hand. Osteomyelitis. Chest purulent infection (pleural empyema). Peritonitis. Anaerobic infection (clostridial and non-clostridial infection, tetanus). Closed soft-tissue injuries. Fractures and dislocations. Closed craniocerebral injury (concussion, contusion, brain compression). Chest trauma (pneumothorax, hemothorax). Abdominal trauma.

Developers:

Associate Professor of the Department of Surgery — PhD, A.A. Barkhudarov

Head of the Department of Surgery — MD, Professor, A.E. Klimov

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Faculty Surgery**
The amount of the discipline	**5 CU (180 hours)**
Course Description	
Topics	**Content of topics**
Particular issues of surgery	1. Appendicitis. Acute appendicitis. Clinic. Diagnostics. Treatment. Complications of appendicitis. Clinic. Diagnostics. Treatment. Chronic appendicitis. Clinic. Differential diagnosis. Indications for surgery. 2. Hernias. The General notion about hernias. Types of hernias. Inguinal hernia. Congenital inguinal hernias. Femoral hernias. Umbilical and hernia of the white line of the abdomen. Anatomy. Differential diagnosis Clinic. Surgical treatment. Strangulated hernia. Views. Clinic. Diagnostics. Treatment. Clinic, diagnosis. Features of operational equipment. 3. Bowel disease. Crohn disease. Ulcerative colitis. Clinic. Diagnostics. Treatment. Complications. Diverticulosis of the large intestine. Complications. Diagnostics. Treatment. Colon cancer. Clinic. Diagnostics. Treatment. 4. Breast disease. Benign breast tumors. Views. Method of treatment. Breast cancer. Classification. Clinic. Diagnosis, treatment. 5. Liver disease. Liver cancer. Views. Diagnostic method. Treatment. Portal hypertension syndrome. Cirrhosis. Diagnostics. Complications. Clinic. Treatment. Echinococcus of the liver. Species. Diagnosis. Treatment. 6. Diseases of the stomach and duodenum. Gastric and duodenal ulcer. Conservative therapy. Indications for surgical treatment. Methods of surgical treatment. Complications of duodenal ulcer. Clinic. Diagnostics. Treatment. Stomach cancer. Classification. Clinic. Diagnostics. Type of operation. Cancer of papilla Fateri. Clinic. Diagnostics. Treatment. 7. Diseases of the rectum. Hemorrhoids. Complications. Diagnostics. Treatment. Benign tumors of the rectum. Clinic. Diagnostics. Treatment. Rectal cancer. Diagnostics. Treatment. 8. Vascular disease. Varicose disease. Diagnostics. Clinic, complications. Treatment. Atherosclerosis of vessels of the lower extremities. Clinic. Diagnostics. Treatment. Complications. Differential diagnosis of atherosclerosis and obliterating endarteritis of

	the lower extremities. 9. Thyroid disease. Thyrotoxic goiter. Clinic. Diagnostics. Treatment. Graves' disease. Clinic. Diagnostics. Treatment. Endemic goiter. Classification, diagnosis. Treatment, prevention. Complications of thyroid surgery. 10. Calculous cholecystitis. Acute cholecystitis. Clinic. Diagnostics. Treatment. Complications of cholecystitis. Chronic cholecystitis. Clinic. Diagnostics. Treatment. Type of operation. 11. Intestinal obstruction. Classification. Clinic. Methods of conservative and surgical treatment. Mechanical and dynamic intestinal obstruction. Classification. Reasons. Views. Clinic. Diagnostics. Treatment. 12. Mechanical jaundice. Reasons. Diagnostic method. Treatment. 13. Pancreatitis. Acute pancreatitis. Classification. Clinic. Diagnostics. Treatment. Complications. Chronic pancreatitis. Classification. Clinic. Methods of diagnosis and surgical treatment. 14. Peritonitis. Classification. Etiopathogenesis. Clinic. Treatment. Ways to reduce mortality. 15. Special research methods. Methods of endoscopic diagnosis of diseases of the digestive system. Modern methods of early diagnosis of tumors of the digestive tract. X-ray contrast methods for the study of bile ducts.

Developers:

Associate Professor of the Department of Surgery	PhD, A.A. Barkhudarov
Professor Head of the Department of Surgery	MD, professor. A.E. Klimov

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Anesthesiology, Resuscitation, Intensive Care**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Anesthesiology. The basics modern anesthesiology	The purpose and objectives of the anesthetic aid. Classification of modern methods anesthetic benefits. Local anesthesia. General anesthesia. Methodology. Advantages and disadvantages, indications and contraindications. Dangers and complications, their prevention and treatment.
Pain syndrome. Pain acute and chronic	The modern concept of pain. Pharmacological drugs used for the purpose of pain relief. Pain relief in the postoperative period. Therapy chronic pain syndrome.
Reanimatology. The basics modern intensive care. Cardiopulmonary resuscitation. Postresuscitation period	Methods for restoring airway patency ways. Basic cardiopulmonary algorithm mresuscitation. Diagnosis of brain death. Craniocerebral hypothermia.
Intensive therapy. Acute respiratory failure	Intensive therapy for ODN. Respiratory support. Selection of ventilation parameters. Indications for mechanical ventilation. Methodology of carrying out.
Acute cardiovascular failure	Intensive care for acute cardiovascular failure. Central monitoring hemodynamics. The use of inotropic and vasoactive drugs.
Contemporary aspects infusion-transfusion therapy	Assessment of volemic status. Indications for ITT. Infusion media. Basic and corrective ITT. Transfusion of red blood cells and components blood. Central venous catheterization.
Homeostasis	Etiology and pathogenesis of CBS disorders. Views violations. Diagnostics of violations. Methods of correction of shifts of CBS. Water sectors: volume and ionic composition. Regulation of water-electrolyte balance. Diagnostics of violations. Osmolarity. Prevention and correction of water-electrolyte violations.
Shock. Ectracorporeal methods of treatment	Classification of forms of shock. The clinical picture. Diagnostics. Intensive therapy. Ectracorporeal methods of treatment.
Acute disturbances of consciousness. Intensive therapy. Coma.	Classification of coma. Algorithm primary diagnosis and treatment of comatose states. Assessment of the level of consciousness. Monitoring. General principles of intensive care for comatose states. Brain edema therapy.

Sepsis. Infection in the ICU	Sepsis. Clinical manifestations. Diagnostics. Modern principles of antibiotic therapy. Intensive therapy.
Artificial nutrition at critical conditions	Diagnosis of nutritional deficiencies. Determination of the required volume and composition of artificial medical nutrition. Grade the effectiveness of artificial medical nutrition. Nutritional support algorithms and protocols in intensive care.

Developers:

Associate Professor
Department of Anesthesiology and Reanimatology
with Medical Rehabilitation Course V.A. Moroz

Head of Department
Department of Anesthesiology and Reanimatology
with Medical Rehabilitation Course M.V. Petrova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Urology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Methods of research of a urological patient	Symptoms of urological diseases of urination disorders. Qualitative and quantitative changes in urine. General clinical and laboratory methods of research. Instrumental and endoscopic methods of examination of a urological patient. X-ray examination methods: overview and intravenous urography, cystography, urethrography, retrograde and antegrade pyelography-ultrasound of the kidneys, bladder, prostate, genitals. Multispiral computed tomography of the kidneys, retroperitoneal space of the bladder, pelvis, prostate. Magnetic resonance imaging of the kidneys, bladder, prostate, renal angiography, venocavography. Radioisotope methods of studying the kidneys, parathyroid glands, testicles.
Anomaly of genitourinary system	Fundamentals of embryology of the urinary and reproductive system. Classification of kidney abnormalities. Ultrasound and X-ray diagnostic methods. Abnormalities of the ureters, bladder and urethra. Classification, treatment. Anomalies of the reproductive system, classification, diagnosis, treatment.
Non-specific inflammatory diseases of genitourinary system	Pyelonephritis, etiology, pathogenesis, clinic, diagnosis, classification, principles of treatment, paranephritis, nephrosclerosis, pionephrosis, cystitis, urethritis, prostatitis, epididymoorchitis, etiology, pathogenesis, clinic, diagnosis, treatment.
Urolithiasis	Etiology, pathogenesis, clinic, diagnosis of urolithiasis. Theories of the formation of stones. Differential diagnosis of coralloid stones, bilateral kidney stones. Contact and remote methods of stone crushing. Surgical treatment of urolithiasis. Prevention
Injuries of the genitourinary system	Kidney injuries: open, closed, clinic, diagnosis, treatment. Injuries of the ureters. Mechanism, diagnosis, treatment. Damage to the bladder and urethra. Etiology diagnosis, clinic and treatment. External genital injuries, diagnosis and treatment
Tumors of the genitourinary system	Kidney tumors. Classification, diagnosis, clinic and treatment. Wilms' tumor. Features of treatment. Tumors of the pelvis and ureters, bladder. Classification according to the

	TNM system. Diagnosis and treatment of testicular tumor. classification, clinic, diagnosis and treatment. Prostate cancer, diagnosis and treatment.
Acute and chronic renal failure	Etiology, pathogenesis, clinic and diagnosis of acute renal failure. Causes of CRF, classification, principles of treatment. Hemodialysis. Principles of the device of the "artificial kidney" device. Kidney transplant, indications, technique of the operation.

Developers:

Professor
Department of Urology and Operative Nephrology
with Oncourology Course Shaplygin L. V.

Head of the Department
Department of Urology and Operative Nephrology
with with Oncourology Course Kostin A. A.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General medicine

The name of the discipline	**Hospital Surgery, Pediatric Surgery**
The amount of the discipline	**10 CU (360 hours)**
Course Description	
Topics	**Content of topics**
Cardiovascular Surgery	Anatomical and physiological information about the cardiovascular system. Non-invasive diagnostic methods. Invasive diagnostic methods. Methods of surgical treatment of vascular diseases. Interventional surgery. The main methods of surgical treatment of aneurysms. Varicose veins. Diseases of the lymphatic vessels. Congenital heart defects. Etiology, pathogenesis, pathomorphology, pathophysiology of acquired heart defects. Principles and techniques for performing a heart transplant operation. Etiology, pathology, classification of heart tumors.
Abdominal Surgery	Acute appendicitis. Acute cholecystitis. Cholecystopancreatitis. Liver failure. Acute pancreatitis. Chronic pancreatitis. Liver injury. Cysts, abscesses and tumors of the liver. Peptic ulcer and duodenal ulcer. Ulcerative colitis and Crohn's disease. Intestinal bleeding. Classification of intestinal obstruction.
Thoracic Surgery	Semiotics diseases of the chest wall. Diagnostic methods: non-invasive and invasive. Methods of operative treatment. Pneumothorax, hemothorax, hemopneumotoxax, hydrothorax, chylothorax, pyopneumothorax. Congenital malformations of the chest wall. Inflammatory diseases: non-specific and specific. Chest wall tumors: benign and malignant. Congenital tracheal defects. Traumatic injuries of the trachea. Congenital malformations of the esophagus. Foreign body esophagus. Damage to the esophagus. Burns the esophagus. Benign tumors of the esophagus. Esophageal carcinoma. Cysts and tumors of the diaphragm.
Pediatric Surgery	Anatomical and physiological features of the body of the child. The principal differences in pediatric surgery. Features survey of young children and newborns. Classification of intestinal obstruction in children. Damage to the chest cavity. Damage to the abdominal organs. Damage to the tubular and flat bones. Damage to nerves and blood vessels. Traumatic brain injury. Features of pediatric surgery: goals and objectives, history of development.

Developers:

Associate Professor of the Department of Hospital Surgery

with a Course of Pediatric Surgery, Ph.D., MD — P.I. Manzhos

Associate Professor of the Department of Hospital Surgery
with a Course of Pediatric Surgery, Ph.D., MD — M.A. Chinikov

Associate Professor of the Department of Hospital Surgery
with a Course of Pediatric Surgery, Ph.D., MD — V.Yu. Baranovich

Associate Professor of the Department of Hospital Surgery
with a Course of Pediatric Surgery, Ph.D., MD — G.I.Veretnik

Head of the Department of Hospital Surgery
with a course of Pediatric Surgery, Ph.D., MD — A.G. Faybushevich

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Medicine institute

ANNOTATION DISCIPLINE

Educational program
31.05.01 General medicine

Name of the discipline	**Dentistry**
Scope of discipline	**2 EC (72 hours)**
Discipline summary	
The name of the sections (topics) of the discipline	**A summary of the sections (topics) of the discipline:**
Introduction to the course of dentistry.	Goals and objectives of the discipline. The role and place of the dentist in clinical medicine. Manifestations in the oral cavity of some common diseases (demonstration and analysis of rare clinical cases from the experience of the department, requiring general clinical training of dentists). Algorithm for diagnostics and medical interaction. Principles, features of treatment. (Symptomatic and pathogenetic therapy)
Manifestations of general somatic diseases in the mouth.	Manifestations in the mouth of diabetes mellitus, arterial hypertension, blood diseases, HIV infection.
Provision of dental care to patients with cardiac pathology.	Features of the examination of cardiac patients. Clinical experience of the department. Long-term results of clinical observations.
Review of modern means and methods of radiological diagnostics of the head and neck organs.	The main tasks and principles of radiation diagnostics in the mouth. Types of radiation examinations (CT, MRI, PET CT, Osteoscintigraphy)
The role of the dentist in solving interdisciplinary problems.	Analysis of complex clinical cases using telemedicine tools and methods. Demonstration of the clinical material of the department (including live broadcast of clinical situations from the RRCRR).
Clinical modeling of outpatient situations requiring dental surgery.	Clinical modeling of the use of composite materials to eliminate defects in dental hard tissues of various origins. Clinical modeling of dental restoration using crowns, veneers and inlays. Demonstration of the possibilities of dental photography using clinical examples from the professional experience of a general dentist.
Clinical aspects of calcium metabolism in the body. The role of calcium in the prevention of dental diseases.	Clinical aspects of calcium metabolism in the body. The role of calcium in the prevention of dental diseases.
Clinical aspects of oral immunity. Protective and	Clinical aspects of oral immunity. Protective and barrier functions of the oral mucosa.

barrier functions of the oral mucosa.	

Developers:

Associate professor of the Department of General and Clinical Dentistry — Gvozdikova E.N.

Head of the Department of General and Clinical Dentistry — **Avanesov A.M.**

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Oncology, Radiation Therapy**
The amount of the discipline	**3 CU (108 hours)**
Course Description	
Topics	**Content of topics**
Lung cancer	The aspects of the modern instrumental, morphological and laboratory diagnostics of lung cancer are considered, together with its TNM staging. Indications and contraindications to planning and implementation of surgery, radiotherapy and drug therapy are discussed. Follow-up and rehabilitation after treatment are highlighted.
Breast cancer	Epidemiology and spread of breast cancer are described. Bio-genetic predisposing factors are discussed. The modern instrumental, morphological and laboratory diagnostics of breast cancer are considered, including its immune histochemistry and genetics. The modern radical operations, plastic surgery on breasts are described. Indications to radiotherapy, chemotherapy and hormonal therapy are discussed.
Stomach cancer	Diagnostics of stomach cancer is described, including X-ray, endoscopic and laboratory methods. Modern data on its morphology are given. Early detection of stomach cancer and TNM classification are discussed. The types of radical and palliative operation depending on localization of the tumor and its spread are described. Modern drug therapy and radiation therapy of stomach cancer are taught.
Esophageal cancer	The modern diagnostic methods in esophageal cancer are considered, which allow to define a tumor's stage and spread. The modern surgical operations, radiotherapy and drug therapy are described, as well as follow-up and rehabilitation.
Colon cancer	The data on the modern instrumental and laboratory diagnostics of colorectal cancers are given. Radical, cytoreductive and palliative surgery in colorectal cancer is described depending on its localization. Indications to chemotherapy and targeted therapy are discussed.

Hodgkin's lymphoma	Modern classification of lymphomas is given. Diagnostics and morphological features of Hodgkin's lymphoma are described. Its classification, modern chemotherapy and radiotherapy, complex treatment and rehabilitation are discussed.
Liver and pancreatobiliary cancers	The modern data on diagnostics and peculiarities of the course of pancreato-biliary and liver cancers are given. The aspects of jaundice control and preparation to surgery, combined and complex treatment are described. Late treatment results are presented.
Skin cancer and melanoma	The epidemiological and statistical data on skin cancer and melanoma are given. Characteristic features of their local development and metastases are described. The modern surgery, radiotherapy and drug therapy of those tumors are discussed. A special emphasis is made on characteristic features of melanoma's local development and metastases.
Chemotherapy of malignant tumors	The principles of modern drug therapy of malignant tumors are discussed. The classification of anti-cancer drugs, mechanism of their action and significance for treatment of individual tumors are taught.
Radiation therapy of malignant tumors	The modern use of various kinds of irradiation for malignant tumors is described. Each kind if irradiation and its use for various malignant tumors are discussed, including radiation therapy on linear accelerators and intra-tissue irradiation. Systemic radiation therapy is also considered.
Thyroid carcinoma	Statistics and epidemiology of thyroid carcinoma. Its morphology and clinical course. Radical operations. Distant and intravenous radiation therapy. Hormonal supportive therapy.
Credit test	Credit exam in the testing and oral form according to Mark-rating system.

Developers:

Associate Professor
of the Department of Oncology and Roentgen-Radiology Kunda M.A.

Associate Professor
of the Department of Oncology and Roentgen-Radiology Zapirov G.M.

Head of the Department of Oncology and Roentgen-Radiology Kaprin A.D.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Traumatology, orthopedy**
The amount of the discipline	**6 CU (216 hours)**
Course Description	
Topics	Content of topics
General questions of traumatology	History of traumatology and orthopedy development. Bone tissue regeneration. Types of trauma and trauma care organization.
Principes of pediatric and adult traumatology	Methods of evaluation. Basic principles of treatment in traumatology and orthopedy. Treatment features in different age groups.
Injuries of the hip joint and femur	Fractures of the head and neck of the femur. Fractures of trochanterian part of the femur. Fractures of the acetabulum. Soft tissue injuries of the hip.
Disorders of kne-joint, ankle, foot	Fractures of the bones of knee-joint (paraarticular and intraarticular condyles fractures of femur and tibia, patella fractures). Knee-joint soft-tissue disorders. Bone and soft-tissue damage of shin. Trauma of ankle-joint.Trauma of heel-bone, metatarsal and tarsal bones, phalanxes, soft-tissue foot disorders.
Upper-extremities traumas	Bone and soft-tissue hand trauma (hand bones fractures and dislocations, hand tendons and muscles impairment). Scapula, clavicle, humeral disorders, humeral-joint soft-tissue disorders. Bone and soft-tissue injuries of elbow. Forearm and wrist bone and soft-tissue disorders.
Open, complicated and shoot fractures	Open and shoot fractures. Complicated fractures (fractures with inner organs damage, neuro-vascular damage, infected fractures). Classification. Diagnostics. Treatment.
Polytrauma, multiple trauma, combined trauma	Polytrauma. Multiple trauma. Combined trauma. Classification. Diagnostics. Treatment.
Spinal injuries. Brain injury	Spinal injuries (vertebra fractures and dislocations, vertebra arcs and processes injury on different levels). Close brain injury. Open brain injury.

Thoracic and pelvic injuries	Isolated pelvic injuries (pelvic column fractures, combination with pelvic inner organs injuries). Isolated and combined thoracic bone fractures (rib fractures, hemo-pneumothrax, heart injury, mediastinum.
Osteoarthrosis	Osthearthrosis of big and small joints, posttraumatic osteoarthrosis. Classification. Diagnostics. Treatment.
Ostearthritis	Specific and non-specific arthriris (septic, rheumatoid arthritis).
Arthroplasty	Modern types of implants of large joints, tribology. Hip arthroplasty . Knee and shoulder arthroplasty. Big joints arthroplasty.
Osteochondrosis	Degenerative spine diseases. Spondylolisthesis. Spondilodesis. Scheuermann-Mau disease. Kifo-scoliotik deformities.
Child orthopedy	Hip dysplasia. Congenital lower extremities deformities. Congenital upper extremities deformities. Congenital muscular torticollis. Clubfoot. Clubhand. Osteogenesis imperfecta.
Skeletal deformities	Deformity of the foot. Valgus deformity of the 1st toe. Plano-valgus foot. Varus, valgus deformity of the shin. Treatment of posttraumatic deformities of the long bones.
Skeletal tumors	Benign skeletal tumors. Malign skeletal tumors.
Arthroscopy	Arthroscopy knee, shoulder, hip and other joints.
Tuberculosis, poliomyelitis	Tuberculosis, tuberculosis spondylitis. Poliomyelitis.
Osteoporosis. Modern opinion and treatment	Osteoporosis. Mineral supply disorders. Clinic, diagnosis. Osteoporosis complications. Modern concept for osteoporosis treatment.

Developers:

Assistant of Department of Trauma and Orthopedy M.F. Lazko

Docent of Department of Trauma and Orthopedy A.P. Prizov

Head of Department of Trauma and Orthopedy N.V. Zagorodniy

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Obstetrics and Gynecology**
The amount of the discipline	**14 CU (504 hours)**
Course Description	
Topics	**Contents of topics**
Gynecology	Propaedeutics of gynecological diseases. Inflammatory diseases of the female genital organs. Menstrual function disorders. Pathology of the transitional (perimenopausal) period. Infertile marriage and family planning issues. Cysts of the genital organs. Uterine fibroids. Dyshormonal diseases of the mammary glands. Endometrioid heterotopias. Precancerous and neoplastic diseases of the genitals. Trophoblastic disease. Disorders of the development of the genitals. Incorrect positions of the genitals. Some diseases of women' urinary system. Typical gynecological operations Emergency conditions in gynecology.
Physiological obstetrics	Clinical anatomy and physiology of the female genital organs. The physiology of pregnancy. The physiology of childbirth. Physiology of the postpartum period and the newborn period.
Pathological obstetrics	Pathology of pregnancy. Pathology of childbirth. Birth trauma of a mother. Pathology of the postpartum period. Physiology and pathology of the newborn period.
Operative obstetrics	General information about obstetric operations. Indications, conditions and contraindications for performing operations. Abortion operations. Delivery operations. Obstetric forceps (abdominal and weekend). Vacuum extraction. Fetal extraction by the pelvic end. Caesarean section in modern obstetrics.

	Indications, contraindications, conditions, anesthesia, technique, complications.

Developers:

Associate Professor
Department of Obstetrics and Gynecology
with the Course of Perinatology — Lebedeva M. G.

Assistant
Department of Obstetrics and Gynecology
with the Course of Perinatology — Novginov D. S.

Head of the Department
Department of Obstetrics and Gynecology
with the Course of Perinatology — Radzinsky V. E.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Pediatrics**
The amount of the discipline	**9 CU (324 hours)**
Course Description	
Topics	**Content of topics**
Child development, growth and nutrition Propaedeutics of children's diseases Neonatology. Diseases of newborns and young children. Allergology. Allergic diseases. Cardiology. Diseases of the cardiovascular system in children. Rheumatology Gastroenterology. Diseases of the gastrointestinal tract Nephrology. Diseases of the urinary system in children. Hematology. Blood diseases in children Endocrinology. Diseases of the endocrine system in children Infectious diseases in children	Organization of medical and preventive care for children. Fundamentals of the organization of the children's hospital and specialized pediatric care. Periods of childhood. Children's nutrition. Physical and sexual development. Age-related morphological and functional features of organs and systems. Introduction to maternal-fetal medicine. Physiology and pathology of the newborn. Borderline conditions of newborns. Principles of rational feeding of newborns. Jaundice of newborns. Birth trauma. Perinatal lesions of the nervous system. Diseases of the upper respiratory tract. Lower respiratory tract infections: acute bronchitis, bronchiolitis, pneumonia. Chronic lung diseases in children. Bronchial asthma. Diseases of the circulatory system. Congenital heart defects and large blood vessels. Diseases of the myocardium and pericardium. Rheumatic fever. Diffuse connective tissue diseases: systemic lupus erythematosus, juvenile rheumatoid arthritis, juvenile dermatomyositis, systemic scleroderma. Systemic vasculitis. Diseases of the hematopoietic organs, hemorrhagic and thrombotic diseases. Diseases of the digestive system. Diseases of the urinary system. Infectious diseases. Infectious exanthemas. Bacterial meningitis and meningoencephalitis. Herpesvirus infections. Acute intestinal infections. Malaria, HIV infection, tuberculosis, hemorrhagic fevers.

Developers:

Associate Professor, Department of Pediatrics	Kantemirova M.G.
Associate Professor, Department of Pediatrics	Illarionova T.Yu.
Head of the Department of Pediatrics	Ovsyannikov D.Yu.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Physical Culture and Sport**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Practical section	Topic 1. Athletics. Topic 2. Basketball. Topic 3. Badminton. Topic 4. Skiing. Topic 5. Volleyball. Topic 6. Football.
Control section	Control tests to assess physical readiness, control tests to assess technical readiness, compulsory tests assessment of general physical training

Developers:

Associate Professor
Department of Physical Education and Sports — Sergeeva Yu.S.

Associate Professor
Department of Physical Education and Sports — Lebedeva T.R.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Biotechnology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topic	**Content of topics**
Introduction to modern biotechnology.	The vectors of biotechnology development and medical applications Bioobject is the basis of biomedical technologies, classification, improvement.
Fundamentals of BT production.	Features of production of medicines by methods of modern biotechnology.
Cell technology in medicine.	Culture of cells, organs and tissues of plants. Cultivation of organs. Animal cloning. Methods of nuclei transplantation. Cloning of mammals. Methods of preservation of cell cultures.
Enzymes as objects and means of production of drugs.	Medicines based on enzymes for substitution therapy and treatment of purulent inflammatory processes and necrosis. Enzyme preparations as biocatalysts in the pharmaceutical industry.
Plant producers of BAS.	The main groups of BAS produced by plants used in medical practice. Alkaloids. Cardiac glycosides. Triterpene saponins. Terpenoids and essential oils. Flavonoids and polyphenolic compounds.
BAS produced by microorganisms.	Antibiotics. Probiotics and normoflora. Amino acids. Vitamins. Steroids.
Recombinant proteins and peptides	Production of genetically engineered insulin and peptide growth factors. Recombinant interleukines, interferons, etc.
Gene therapy.	Medicines based on gene therapy methods, the principle of approach, the concept of “pathological” protein.

Developers:

Professor
Department of General Pharmaceutical
and Biomedical Technology A.V.Lukanin

Associate Professor
Department of General Pharmaceutical
and Biomedical Technology T.E. Samatadze

Assistant
Department of General Pharmaceutical
and Biomedical Technology A.A. Savosina

Head of the Department
Department of General Pharmaceutical
and Biomedical Technology S.N. Suslina

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Medical Elementology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to medical elementology	1. Subject of medical elementology. Biological classification of chemical elements. Concept of bioelements. 2. Biogeochemistry and factors affecting the elemental status of population. 3. New paradigm of nutrition and therapy.
General elementology	4. Factors affecting the homeostasis of trace elements. Interactions between trace elements. 5. Elemental status of humans. Personalized assessment of human elemental status.
Special elementology	6. Essential trace elements (iron, zinc, copper, manganese, chromium, cobalt, molybdenum, selenium, iodine): role in the body; absorption; excretion; deficiency and toxicity; associated diseases; sources. 7. Conditionally essential trace elements (lithium, strontium, vanadium, nickel, tin, silicon, fluorine): role in the body; absorption; excretion; deficiency and toxicity; associated diseases; sources. 8. Toxic and potentially toxic trace elements (arsenic, aluminum, lead, cadmium, mercury): role in the body; absorption; excretion; toxicity; associated diseases; sources. 9. Macroelements (potassium, sodium, calcium, magnesium, phosphorus, sulfur, chlorine): role in the body; absorption; excretion; deficiency and excess; toxicity; associated diseases; sources. 10. Elements-organogens (carbon, oxygen, nitrogen, hydrogen): role in the body; absorption; excretion; associated diseases; sources.
Role of chemical elements in diagnostics and treatment of human diseases	11. Imbalances of chemical elements at various diseases: diseases of the skin and its appendages, diseases of the musculoskeletal, broncho-pulmonary, immune, endocrine, cardiovascular

	systems, childhood diseases, trace elements in oncology and hematology.

Developers:

Senior lecturer of the Department of Medical Elementology A.A. Skalny

Head of the Department of Medical Elementology A.V. Skalny

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Evidence-Based Medicine**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to Evidence-Based Medicine. Levels of Evidence.	1. Evidence-based medicine as the main way to improve the quality of medical care for the population. History of Evidence-Based Medicine 2. Basic concepts and methods. Tasks of evidence-based medicine, role in the training of a doctor. 3. Levels of evidence (A, B, C) and recommendation classes (I, IIa, IIb, III). A systematic review. Meta-analysis. Final interview for the discipline.
Statistics in evidence-based medicine. Analysis of publications from the position of evidence-based medicine.	1. Basic statistical knowledge necessary for the interpretation of data on evidence-based medicine. 2. Graphical representation of statistical data. 3. Analysis of publications from the position of evidence-based medicine. Conflict of interest. Final interview for the discipline.
Pharmacoepidemiology. Pharmacoeconomics.	1. Definition. Types of pharmacoepidemiological studies. 2. Basic methods of pharmacoepidemiological analysis and modeling. 3. Analysis of drug consumption. Final interview for the discipline.
Clinical studies. Formular system. Adverse drug reactions.	1. Clinical studies of medicines: phases, GCP, ethical and legal norms. 2. Formular system: principles of construction, methods of choosing medicines. System of rational use of medicines in Russia. 3. Classification of NLR. Methods of monitoring. Pharmacovigilance. Final interview for the discipline.

5. Sources of the Data for Evidence-Based Medicine.	1. Uniform standards for reporting the results of randomized controlled trials. 2. Development of clinical guidelines and guidelines. 3. Clinical thinking and the logic of the diagnosis in the era of evidence-based medicine. Final interview for the discipline. Final interview for all sections of the discipline.

Developers:

Professor
Department of Evidence-Based Medicine O.Ph. Vykhristyuk

Professor
Department of Evidence-Based Medicine E.E. Petryajkina

Head of the Department
Department of Evidence-Based Medicine I.E. Koltunov

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Allergology**
The amount of discipline	**2 CU (72 hours)**
Course Description	
Topics	C**ontent of topics**
General Allergology	Organizational principles of care for patients with allergic diseases. The main provisions of the organization of the allergological service of the Russian Federation. Specific diagnostics of allergic diseases. Allergic history. Skin tests with allergens, provocative allergy tests. Basic laboratory methods of specific diagnostics in practical allergology. Specific in vitro diagnostics of allergic diseases. Molecular allergological methods for the specific diagnosis of allergies. The most important allergens and their classification. Classification and pathogenesis of allergic reactions. The role of IgE in the development and course of immediate allergic reactions. Early and late phases of allergic reactions, the role of immune response mediators (cytokines, chemokines, growth factors and metabolites of arachidonic acid).
Particular Allergology	Allergic skin diseases. Atopic dermatitis, mechanisms of development, etiology, diagnosis and treatment methods. Bronchial asthma, classification, diagnosis, staged methods of therapy. Allergic rhinitis and rhinoconjunctivitis, etiological factors, relationship with bronchial asthma. The role of different types of histamine receptors in the pathogenesis of rhinitis and rhinoconjunctivitis. Modern methods of therapy. Pollinosis. Causal factors. Allergen-specific and non-specific methods of therapy. Urticaria and angioedemas. Features of the clinical picture. The relationship of pathologies. Modern approaches to therapy. Drug allergy. Major drug allergens. Diagnostics of drug allergy, main clinical manifestations. Pseudo-allergic reactions. The main factors in the development of pseudoallergic reactions. Distinctive features of pseudo-allergies and true allergies. Anaphylactic shock. Causal factors of occurrence. Tactics of therapy for anaphylactic shock.

Professor
Department of Dermatoveneorology, Allergology
with the Course of Immunology R.A.Khanferyan

Head of Department
Department of Dermatoveneorology, Allergology
with the Course of Immunology O.V.Zhukova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Maxillofacial Surgery**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Odontogenic inflammatory diseases	Anatomy and topographic anatomy of the cellular spaces of the maxillofacial region. Clinical characteristics of inflammation. Pathoanatomic and pathophysiological picture of inflammation. Determination of abscess and phlegmon. Ways of spreading a purulent infection. The method of treatment of a purulent wound of the maxillofacial region. Principles of medical treatment of acute inflammatory diseases of the maxillofacial region.
Non-firearm fractures of the upper jaw, zygomatic bone, nasal bones	Classification of facial skull fractures. Etiology, pathogenesis, assessment of the severity of damage, general posttraumatic disorders, taking into account age and concomitant pathologies. Features of emergency care for fractures of the upper jaw, zygomatic bone, nasal bones. Prevention, diagnosis and prognosis of post-traumatic complications, the choice of therapeutic tactics, interaction with doctors of related specialties.
Non-firearm fractures of the lower jaw	Classification of fractures of the lower jaw, the mechanisms of their occurrence. Clinic, diagnosis and treatment of patients.
Neoplasm of the maxillofacial area	Classification of tumors of the maxillofacial region. Diagnosis, features of the course and treatment of benign and malignant tumors of the maxillofacial area. Emergency and planned care for patients with tumors of the maxillofacial region. Differential diagnosis of tumors with similar pathological processes. A treatment plan for various tumor processes.
Diseases of the salivary glands	Methods of research of salivary glands, methods of its assessment. Classification, clinical picture and treatment of sialoadenitis, salivary stone disease, tumor lesions of the salivary glands. The technique of diagnostic puncture of the glands, removal of stones from the ducts of the salivary glands, extirpation of the submandibular and parotid salivary glands, an algorithm for treating diseases depending on etiopathogenesis.

Types and origin of defects. The basic principles of reconstructive operations in the maxillofacial region	Causes and types of defects of the maxillofacial region. Principles of planning and conducting reconstructive operations in the maxillofacial region. Indications for various types of reconstructive operations. Deontological methods of behavior with patients with defects and deformities of the tissues of the maxillofacial region. Features of the structure of the maxillofacial region and the basic principles of planning restorative treatment, the main components of restorative treatment, types of reconstructive operations and features of their implementation in the maxillofacial region, features of medical rehabilitation of patients with defects and deformities of the maxillofacial region.

Developers:

Associate Professor
Mathematical Institute named after akad. S. M. Nikolsky Tokarev A. A.

Director
Mathematical Institute named after akad. S. M. Nikolsky Skubachevsky A. L.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Autopsy Course**
The amount of the discipline	**1 CU (36 hours)**
Course Description	
Topics	**Content of topics**
Organization of the pathology service	Introduction to pathological anatomy. History of the development of pathological anatomy. Characteristics and forms of pathology work in health care settings. Medical ethics and deontology. Features of ethics and deontology in pathological anatomy.
Rules of the sectional studies	Rules of conduct in the sectional, clothing doctor. Safety behavior in the sectional. Features clothing doctor with suspected infectious diseases. Compliance with sanitary and antiepidemic rules of work in the sectional room and biopsy block. The procedure for autopsy: the appearance of the deceased, the state of the musculoskeletal system. An autopsy study of the cranial cavity and its contents, the study of the pituitary. Chest dissection, thoracic cavity examination. Abdominal cavity dissection, the study of the digestive system, opening of the retroperitoneal space.
Rules of biopsy studies	Safety behavior, clothing doctor. Obligations of a clinician for taking, fixing, marking, storing and delivering biopsy and surgical material to a histological laboratory. The rules of registration of the accompanying documents to the histology laboratory. The responsibility of the clinician for the time and quality of the material and documents sent.
Principles of design and comparison of the final clinical and pathologic diagnoses	Underlying disease, competing disease, comorbidities, baseline disease. Complication of the underlying disease. Comorbidities. Guidelines for issuing medical certificates of death. Categories differences diagnoses. Objective and subjective reasons of diagnostic errors.

Developers:

Associate Professor
Department of Pathologic Anatomy, PhD N.A. Solovieva

Head of the Department
Department of Pathologic Anatomy, professor, DSc I.I. Babichenko

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Russian language and culture of speech**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Culture of Academic and Scientific Communication	Russian language and speech. A culture of speech. Types of communication: academic, scientific etc. The basic concepts of the course. Literary language, literary and linguistic norm. Types of norms. Speech and its characteristics. Speech influence. The methods of persuasion. The basic norms and rules of non-verbal and verbal etiquette.
Culture of Professional Communication	Professional communication: the essence, features, innovative technology tools. Communicative portrait of a specialist. Oral professional communication: general concept, the basic communication forms and signs. Written speech of a doctor. Innovative informational and communicative technologies of a professional interaction. Tolerant intercultural professional communication: the basic principles and strategies.

Developers:

Associate Professor
Russian Language Department — Yu.N. Gosteva,

Associate Professor
Russian Language Department — R.A. Arzumanova

Associate Professor
Russian Language Department — M.A. Bulavina

Head of the Department
Russian Language Department —  **V.B. Kurilenko**

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ANNOTATION OF EDUCATIONAL DISCIPLINE

Academic course working program

31.05.01 General Medicine

Name of Academic Discipline	**Bioorganic Chemistry**
Capacity of discipline	**2 Credits (72 h.)**
Course Description	
Names of sections (themes) of discipline	**Section (theme) description of discipline:**
Introduction. Hydrocarbons	Bioorganic chemistry as a branch of science that studies the structure and mechanisms of biologically active molecules from the standpoint of organic chemistry. Organic chemistry - a fundamental basis of bioorganic chemistry. The main provisions of the theory of chemical structure. Isomers. Classes of organic compounds. Reactivity of hydrocarbons
Functional classes of Organic Compounds	Alcohols (alcohol and di- and triols). Phenol. Thiols. Amines. Aldehydes and ketones. Carboxylic acids Natural high fatty acids Fats and oils Lipids and phospholipids. P-Aminophenol. Amino alcohols. Hydroxy acids. Aldehyde and keto acids. Amino acids.
Biopolymers and their structural components	Peptides and proteins. Carbohydrates. Carbohydrates in nature. The significance of carbohydrates. Photosynthesis. Monosaccharides. Oligo- and polymaccharides. Reducing and non-reducing disaccharides: sucrose, maltose, cellobiose, lactose. Polysaccharides: starch, glycogen, cellulose, pectins. Heteropolysaccharides: chondroitin sulfates, heparin, hyaluronic acid.
Biologically important Heterocyclic Compounds.	General overview of heterocycle structures: five-membered heterocycles with one heteroatom (pyrrole, thiophene, furan) and two heteroatoms (imidazole, pyrazole); six-membered heterocycles with one and two heteroatoms (pyridine, pyrimidine); annulated heterocycles (indole, purine). Pyrazole, imidazole, pyrimidine, purine.

Developers
Associate Professor, Department of Organic Chemistry, Ph.D. E.A. Sorokina

Senior Lecturer, Ph. D. A. V. Listratova

Head of Organic Chemistry Department
Professor, Dr. L.G. Voskressensky

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Biostatistics**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Basics of Biomedical Research	**PLANING of BIOMEDICAL RESEARCH.** Stages of biomedical research: planning and research programs; data collection; processing the collected material; data analysis, conclusions and recommendations. Population and sampling. Requirements for the sample. **TYPES OF RESEARCH.** Cross-sectional and longitudinal, prospective and retrospective studies; case-control study, cohort study, randomized clinical trials, meta-analysis
Descriptive Statistic	**GRAPHICAL REPRESENTATION OF DATA** The concept of statistical graphics, the basic elements of graphics, chart types. Histogram. Empirical distribution function and its properties. **ESTIMATES OF DISTRIBUTION PARAMETERS.** Point estimation of distribution parameters, requirements for point estimates: unbiasedness, consistency, efficiency. Interval estimation of distribution parameters, confidence interval, confidence probability. Interval estimation of the mean, interval estimation of variance.
Statistical Analysis of Data	**STATISTICAL HYPOTHESIS TESTING.** General scheme of testing statistical hypotheses. Types of errors: systematic and random errors, error I and II type. Determination of sample size. Statistical criterions, the critical area, the level of significance, power of the criterion. Pearson, Fisher and Kolmogorov criterions. Testing statistical hypotheses about the equality of the average to the specific numeric value. **COMPARING THE GROUPS** Statistical hypotheses about the equality of the average values of the two normally distributed populations. Testing statistical hypotheses about the equality of dispersions of the two research normally distributed general totality with unknown and known average value. Paired and unpaired samples. **REGRESSION ANALYSIS.** Linear regression, regression coefficient, regression

	equation, estimation of regression parameters using the least square method. Testing the hypothesis on the significance of the regression dependence. **CORRELATION ANALYSIS.** Linear and rank correlation. Pearson's linear correlation coefficient, Spearman's rank correlation coefficient. Testing the hypothesis on the significance of the correlation coefficient. **ANALYSIS OF THE CONTINGENCY TABLES.** Tables of conjugate variables, the contingency coefficients. Testing the hypothesis about the importance of the contingency coefficients. **ANALYSIS OF VARIANCE.** ANOVA table. ANOVA: mathematical model, the formulation of hypotheses, the sequence of hypothesis testing. Two-factor analysis of variance. Cross-model and hierarchical model of two-factor analysis. **Survival analysis** construction of life tables (Kaplan-Meier, Cutler-Ederer method), survival curve. Comparison of two survival curves (Logrank test, Gehan's test).

Developers:

Senior Lecturer
Department of Medical Informatics and Telemedicine — E.M. Shimkevich

Associate Professor
Department of Medical Informatics and Telemedicine — T.V. Lyapunova

Associate Professor
Department of Medical Informatics and Telemedicine — E.A. Lukyanova

Head of the Department
Department of Medical Informatics and Telemedicine — V.L. Stolyar

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Reproductive Health**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
General reproduction questions	1. Reproductive health of women in the Russian Federation. 2. Reproductive behavior.
Reproductive infectology	1. Normal vaginal biocenosis. 2. Bacterial vaginosis. Vaginitis.
Family planning	1. Family planning. Methods contraception. 2. Abortion is dangerous and safe 3. Pregravid preparation

Developers:

Associate Professor
Department of Obstetrics and Gynecology
with Perinatology Course — Lebedeva M.G.

Head of Department
Department of Obstetrics and Gynecology
with Perinatology Course — V.E. Radzinsky

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Endoscopic Urology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
An introduction to integrative medicine	The history of the development of endoscopic urology, its current state and prospects. Organization of endosurgical operations. Transurethral resection of the prostate operating room.
Endodiagnostics and treatment diseases of the urethra and urinary bladder	Ureteroscopy. Internal urethrotomy. Cystoscopy. Biopsy of the bladder mucosa. Catheterization of the ureter and pelvis. Transurethral resection of the prostate of the bladder and intravesical electrocoagulation. Cystolithotripsy.
Endodiagnostics and treatment diseases of the ureters	Ureteropyeloscopy. Bringing down ureteral stones (lithoextraction). Contact urethrolithotripsy. Dissection of the orifice of the ureter. Internal stenting. Electroresection of the ureterocele.
Endodiagnostics and treatment kidney disease	Percutaneous puncture nephrostomy - PPNS. Puncture of kidney cysts. Percutaneous endonephroureterolithotomy (nephrolitholapaxy).
Laparoscopic methods treatment of urological diseases	Equipment and instruments for laparoscopic operations. The main stages of laparoscopic surgery in urology Laparoscopic organ surgery retroperitoneal space. Laparoscopic operations on the pelvic organs.

Developers:

Professor
Department of Urology and Operative Nephrology
with Oncourology Course Skalny V.V.

Head of Department
Department of Urology and Operative Nephrology
with Oncourology Course Kostin A.A.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Telemedicine**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to Telemedicine	A history of the Telemedicine. Advancement of Telemedicine in Russia and abroad. The reasons for successes and failures of telemedicine projects. The relations between Telemedicine and Computer Science.
A technological equipment of telemedicine activities	Internet portal as an environment for organizing telemedicine events. A technological equipment of mobile telemedicine. Videoconferencing as a technological basis for telemedicine. Patients graphic information storage and transmission standards. Principles of PACS construction. Areas of application and technological equipment of the telepathology.
Scenarios of Telemedicine activities	Legal and economic relations of subjects in telemedicine. Economics and marketing of telemedicine today. Problems of Russian telemedicine and ways to solve them. Protection of personal data during telemedicine activities. The level of confidence in the information sent and responsibilities of the parties. Electronic signature, "telemedicine manager". Features of remote access to IIA during remote consultations. Copyright protection for remote interactive studying. Nowaday's developments of leading manufacturers for telemedicine.

Developers:

Assistant
Department of Medical Informatics and Telemedicine — M. Amcheslavskaya

Professor
Department of Medical Informatics and Telemedicine — V. Fedorov

Head of the Department
Department of Medical Informatics and Telemedicine — V. Stolyar

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the disciplines	**Organization of Special Patient Care**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Specialized care	Organization of special care. Training of personnel. Job responsibilities. Medico-legal, medico-social, medico-psychological, and pedagogical aspects. Organization of the patient's school.
Specialized care in neurology	Organization of care for stroke, brain ischemia, and mental disorders. Process, phases, planning, and evaluation of care. Special care and rehabilitation products.
Specialized care in oncology	Organization of care at various stages of the cancer process. Process, phases, planning, and evaluation of care. Communication problems. Care in the disease. Recovery — faith and hope. Pain. Smell. Risk of developing and forming pressure sores. Skin care in the irradiated area. Food. Therapeutic and protective regime. Special care and rehabilitation facilities.
Specialized incontinence care	ncontinence. Problems of incontinence. Reasons. Treatment. Process, phases, planning, and evaluation of care. Means of care and rehabilitation for incontinence features of selection, selection, use. Skin care, features of intimate hygiene. Depression. Patient's school.
Specialized care in pulmonology	Features of care for bronchopulmonary pathology. Process, phases, planning, and evaluation of care. Position of the patient in bed. Drainage installations. Oxygen therapy. Inhalation. Respiratory and therapeutic gymnastics, massage. Patient's diary. Observation, selfmonitoring, self-withdrawal. Means of care and rehabilitation.
Specialized care for HIV/AIDS	Features of invasive procedures. Process, phases, planning, and evaluation of care. Examination and oral hygiene as a marker of HIV/AIDS, body conditions. Skin care, manicure, pedicure. Prevention of infection.
Specialized trauma care	Features of care for violations of the integrity of the musculoskeletal system, skeletal traction, plaster bandages. Prevention of pressure sores, including under plaster bandages, splints. Skin care. Prevention of pneumonia. Increased motor activity.

Developers:

Senior Lecturer
Department of Nursing Management — M.B. Bershadskaya

Senior Lecturer
Department of Nursing Management — T.D.Antyushko

Assistant
Department of Nursing Management — L. Andrev

Head of the Department
Department of Nursing Management — I.V. Radysh

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

Name of the discipline	**Introduction to Nutritiology**
The scope of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to Nutritionology	Value nutrition in human life. Nutrition, food products and nutrients.
Energy metabolism. Energy requirements.	Energy expenditure of the body and energy requirements. Food as a source of energy. Energy balance. Change of body weight. Energy balance and obesity.
Macronutrients. Micronutrients.	Proteins. Lipids. Carbohydrates. Water. The structure, classification, properties, digestion, absorption, transportation and nutritional value of macronutrients.
	Vitamins. Chemical elements. Amino acids. The general physiological role of vitamins, chemical elements and amino acids. Prevention of loss of vitamins for cooking and storing food. Food is the source of minerals. Prevention of micronutrient deficiencies from food.
Non-nutrient bioactive substances in food.	Minor components of food. Protective components of food products. Non-nutrient and some other components of food that have an adverse effect on the body. Chemical changes in basic nutrients during cooking.
Nutritional value of food products. Nutrition and human health.	Nutritional, biological values and dietary properties of the main groups of food products (home-cooked food and catering).
	Advanced approaches, principles and recommendations. Diseases associated with malnutrition. The link between food, nutrition and non-communicable diseases**.**

Developers:
Assistant professor of the Department of Medical Elementology Skalny A.A.

Head of the Department of Medical Elementology, prof. Skalny A.V.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Molecular Genetics in practical Biology and Medicine**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction into Molecular Genetics	History of Molecular Genetics. Important trends and advances in Molecular Genetics.
Transfer of genetic material in prokaryotes	Conjugation. Transformation. Transduction
Polymerase chain reaction	Polymerase chain reaction. Types of PCR. Detection of amplified products.
Genetic engineering. Hybridization methods	Genetic engineering. Vectors. Restriction Enzyme Digest Analysis. Hybridization methods. Types of nucleic acid hybridization.
DNA sequencing	History of the method. DNA sequencing techniques and their application.
Molecular cytogenetic techniques	Classical cytogenetics: karyotyping techniques. Fluorescence in situ hybridization (FISH). Comparative genomic hybridization (CGH)
Stem cells and nuclear reprogramming	Types of stem cells and their characteristics. Induced pluripotent stem cells. Nuclear reprogramming technologies. Genome editing.
Methods of epigenetic analysis	Introduction into Epigenetics. Factors influencing the epigenotype. Methods of epigenetic analysis.

Developers:

Associate Professor
Department of Biology and General Genetics O.B. Gigani

Head of the Department
Department of Biology and General Genetics M.M. Azova

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Basics of Psychophysiology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Methods of psychophysiological research	Polygraphy. Pneumography. Plethysmography. GSR, electrooculography, electromyography, electrocardiography, electroencephalography (EEG). EEG spectral analysis. Evoked potentials. Computer mapping of the brain. Outside and intracellular registration of neuronal activity. X-ray computed tomography. Structural magnetic resonance imaging (MRI). Positron Emission Tomography (PET). Functional magnetic resonance imaging (fMRI). Video oculography .
Basic approaches to the study of psychophysiological mechanisms	Systems approach in psychophysiology. Behavior. Functional system. Motivation. Memory. The purpose of the action. Advance reflection. Action acceptor. Action programming. Reinforcement. Reverse afferentation. Systemogenesis. Systemic specialization of neurons. Interaction of cognitive systems in purposeful behavior. The concept of the psyche. The origin and development of the psyche in phylogenesis. The problem of the qualitative uniqueness of the human psyche. The structure of the human psyche. The concept of the installation.
Psychophysiology of emotions	Neuroanatomy of emotions. Biologically and socially significant stimuli as a source of emotions. Necessity and informational factors of the emergence of emotions. Cognitive processes in the genesis of emotions. Expression of emotions in animals and humans. Means of non-verbal, emotional communication. Correlation of facial muscle activity and emotions. Functional asymmetry and emotions. Individual differences and emotions. Influence of extraversion, introversion, anxiety. Reactivity of the cardiovascular system. Sexual differences in emotions. Centers of positive and negative emotions. Self-irritation. Limbic system. Central vegetative network. Theories of emotions .

Psychophysiology of thinking and speech	Signaling systems according to I.P. Pavlov. Interaction of the first and second signaling systems. Symbolic display of stimulus. Development of speech. Perception of speech signals. The meaning and types of phonemes and their identification by psychophysiological methods. Wernicke Center. Oral speech. Generation of reactions of the second signaling system with the participation of command neurons: articulation, gestures, written signs. Broca's zone. Preparedness potential. Motor potential. Semantic evoked potential. Internal speech. Thinking as outwardly not expressed operations with traces of memory. Areas of brain activity and thinking. Functional asymmetry of the brain and features of intellectual activity. Verbal and non-verbal intelligence. The main provisions of the theory of activity of A.N. Leontyev. Needs, motives, emotions, personal meaning. The structure of human consciousness according to A.N. Leontiev. The concepts of individuality, temperament, character and personality.
Principles of polygraphic examination (instrumental lie detection)	Theoretical foundations of instrumentalў "lie detection".The main methodological difficulties and errors arising in the course of polygraph examinations. Methods of countering a polygraph. General requirements for the compilation of a questionnaire for the printing industry. Classic methods and tests of polygraph checks, advantages and disadvantages. Methodological techniques of test questions technique. The use of the installation phenomenon in the practice of instrumentalў detection of lies. Using the features of cognitive processes (sensation, perception, attention, memory) in the practice of polygraph tests.

Developers:

Associate Professor of the Department
Normal Physiology — Yu.P. Starshinov

Associate Professor of the Department
Normal Physiology — D.S. Sveshnikov

Head of the Department
Normal Physiology — V.I. Torshin

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Bioethics**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Ethics is a philosophical science	Concept of morality and structure of moral thinking. Ethics is philosophy science. Ethics' types. Main categorical concepts of Morality. Applied ethics: its concept and structure.
Bioethics: its status, range of problems	Concept of bioethics, its place in philosophy and science. Main models of medical ethics throughout the History. Main principles of bioethics.
Modern biomedical ethics	Main models of medical ethics throughout the History. Main principles of bioethics. Historical development of biomedical ethics. Medical ethics. General Issues. Hippocratic Oath and modern biomedical ethics. Rights and moral responsibility of medical personnel. Patients' rights. Ethics and epidemiology.
Abortion. Ethical aspects of reproductive technologies	Moral problems of reproductive technologies. Genetic engineering. Medical ethics. General Issues. Hippocratic Oath and modern biomedical ethics. Rights and moral responsibility of medical personnel. Patients' rights.
Ethical issues of biotechnology (cell studies, gene therapy, gene engineering, cloning)	Rights and moral responsibility of medical personnel. Patients' rights. TU -14. Defining death. Dying, dementia, aging. Main principles of bioethics.
Death and Dying. End of Human Life	Defining death. Dying, dementia, aging. Main principles of bioethics. Medical ethics. General Issues. Hippocratic Oath and modern biomedical ethics. Rights and moral responsibility of medical personnel. Patients' rights.

Organ transplantation	Main models of medical ethics throughout the History. Main principles of bioethics. Rights and moral responsibility of medical personnel. Patients' rights. Defining death. Dying, dementia, aging. Defining death. Dying, dementia, aging. Organ transplantation.
Moral problems of physical and mental integrity of patient	Main models of medical ethics throughout the History. Medical ethics. General Issues. Hippocratic Oath and modern biomedical ethics. Rights and moral responsibility of medical personnel. Patients' rights. Defining death. Dying, dementia, aging. Defining death. Dying, dementia, aging. Mental medicine and antipsychiatry.
Experiments involving Human being and animals: legislative and moral background	Research ethics. Animals' rights. Main principles of bioethics. Historical development of biomedical ethics. International documents protecting humans and animal involved in the research.

Developers:

Associate Professor of the Department of Ethics Savvina O.V.

Head of the Department of Ethics Tsvyk V.A.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Rhetoric**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Rhetoric as a science	Rhetoric as a scientific discipline and as the art of eloquence. A brief history of the development of oratory. Speakers Ancient Greece and Ancient Rome: Cicero, Aristotle, Quintilian, Plato, Socrates, etc. Famous Russian speakers. Rhetorical canon of classical and modern eloquence. Stages of rhetorical canon of rhetoric in the professional sphere and public life of the person the information age. General and private rhetoric. The laws and principles of modern general rhetoric. Neorhetoric.
Types of eloquence	Classification of oratorical speeches on their field of application: academic, social and political eloquence social amenities, spiritual, legal. Their specificity, outstanding speakers. Types of oratorical speeches on the target installation: epideykticheskaya speech, it argues (and persuasive campaigning) informing it, entertaining speech.
Speech influence and persuasion techniques	The methods, strategies and tactics of speech influence. Factors speech influence. Communicative position and its amplification techniques. Speech influence and manipulation. Ways of overcoming hate speech. Classification of methods of persuasion on the nature of the audience: the universal and non-universal (contextual). Methods universal arguments: an empirical reasoning, the theoretical argument. of persuasion: Homer rules, Socrates, Pascal and others.
The Art of the dispute. Reason–why speech.	Classification disputes (discussion, controversy, debate) and the types of issues the discussion (debates, discussions). Functions and species speech argues. Proof argue in speech: thesis, argument, demonstration. to the thesis requirements. Specificity of rhetorical argumentation. Typology of arguments. Working with arguments and their location. correct system (loyal) incorrect (disloyal) techniques for handling disputes. "Tricks" to the dispute. Counter–holds against the improper conduct of the dispute. Art to answer questions. Verbal behavior in a dispute.

Harangue	Features of public speaking. Main types of public performances (on purpose, in the form). Their purpose, general characteristic features. Classification audiences in terms of uniformity. The specifics of the speaker in the lecture halls of different types. Audience management techniques. The main stages of preparation and public speaking (IDEMA). Performance composition. Entry role. The structure of the main part of the speech. Closing remarks. Condensed fixation speech: abstract, abstracts, background. Technology. Nonverbal communication (tone, gestures, facial expressions, gaze, posture).
Dialogic form of verbal communication	Summary question and logical structure. Classification issues. General rules for asking questions and specifics of their use. Answers their views. Terms of formulating a response. Principles speaker answer questions during public speaking. Techniques responses to "tough questions." Question-answer form. Questions as a means of manipulating the interlocutor.
Communication in the structure of everyday and professional activities of doctor	The rhetoric of the conversation. The structure of the conversation. Two types of interlocutors (closed and open). Forms of dialogic communication in a professional medical environment. Professional conversation in a medical environment, its types, content and structure of different types of situations and intraprofessional communication. The principles of conflict-free communication. Communication barriers and overcome them. Ability to listen and hear. Styles of hearing. Principles of active listening.

Developers:

Associate Professor
Russian Language Department — Yu.N. Gosteva,

Associate Professor
Russian Language Department — R.A. Arzumanova

Associate Professor
Russian Language Department — M.A. Bulavina

Head of the Department
Russian Language Department —  **V.B. Kurilenko**

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Psychology of Ethnic Conflict**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Module 1 Introduction to psychology ethnic conflict.	Goals and objectives of the discipline. Conceptual and methodological apparatus. Ethnopsychology and ethno-conflictology as a branch of science, their place in system of sciences, functions, basic concepts: people, ethnos, ethnicity, nationality, ethnic affiliation, ethnic processes and relationships, conflict, constructive and destructive conflict, ethnic conflict, tolerance.
Module 2. Ethnosocial processes and structures in context ethnic conflicts	Ethnogenesis: concept, essence. Main conditions formation of an ethnos. Ethnic hierarchy levels: subethnos, ethnos, superethnos. Ethnic processes in the context of ethnic conflicts. Ethnic identity, ethnic self-awareness. Life of various ethnic groups: home - study - work - rest. Diaspora and its signs. Diaspora functions. Reasons for the formation diaspora. The role of diasporas. Diaspora in the context of ethnic conflicts.
Module 3. Types of crops and problems intercultural communications	Intercultural communication and its specificity. Effects intergroup perception. Ethnocentrism. Role stereotypes, projections and causal attribution in space of interethnic communication. Mechanisms understanding of man by man in space interethnic communication. Crop classification by S. Hofstele, R. Lewis, F. Trompenaars and C. HemplenTurner, basic values, norms of behavior.The non-verbal side of ethnic communication. Expressing emotions across cultures. The main difficulties in communication between representatives of different types of crops. Ethics and etiquette of business communication among different ethnic groups.
Module 4. Ethnic conflicts.	Basic concepts of causes and essence ethnic conflicts. The concept of ethnic conflict. Specificity ethnic conflicts. Interethnic tension. Historical forms of community of people. Principles and methods of analysis of ethnic conflict. Concept functions of ethnic conflict. Forms of manifestation of function: explicit, latent, direct, mediated. Material and spiritual consequences of the ethnic conflict. Constructive and destructive functions ethnic conflict. Signal, informational, differentiating, dynamic and other functions ethno-conflict. Stages of deployment of the conflict and its

	dynamic characteristics. Formation conflict situation. Conflict interaction.
Module 5. Strategy and methods regulation of ethnic conflict.	Modern migrations and conflictogenic factors in metropolis. State and public tolerance building programs and constructive interaction Concept ethno-conflictological monitoring. Methods ethno-conflictological monitoring. Acquaintance with test methods for diagnosing intolerance - Adorno Authoritarian Scale, Measurement Methods ethnocentrism, trust scale D. Yek, B. Rothstein, Methodology INTOO, Metlodica VIKTI, Methodology "Culture of business communication". Latent conflicts. Forecasting methods, prevention and resolution of ethnic conflicts. Methods of preventing and resolving ethnic conflicts. Mediation, pedagogical prevention, preventive actions. Analysis of world experience resolution and prevention of ethnic conflicts.
Module 6. Working in the multi-ethnic collective	Gender and age stereotypes of various ethnic groups in issues of the profession. Features of labor interaction in the cultural traditions of various ethnic groups. Ethnic characteristics of applying for a job: resume and cover letter, interview at hiring, first year of adaptation. Interethnic and sectarian conflicts in polyethnic-confessional collective. Methods formation of group cohesion.
Module 7. Education of tolerance and culture of interethnic communication.	Tolerance. Tolerant personality. Culture interethnic communication in the context of national-ethnic problems. The multiethnic environment and its peculiarities. Features of culture education interethnic communication in teams with mixed national composition. Cultural values in the field of interethnic communication.

Developers:

Associate Professor
Department of Psychology and Pedagogy Polyanskaya E.N.

Head of the Department
Department of Psychology and Pedagogy Bashkin E.B.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Medical Enzymology**
The amount of the discipline	**2 CU (72 hours)**
Course Descriptions	
Topics	**Content of topics**
Medical enzymology. Targets and goals. History of development and success of medical enzymology in Russia	Discovery of enzymes: Louis Pasteur, V. Kühne, Y. Liebig, M. Berthelot, E. Buchner, M.M. Manaseina. The history of the development of national enzymology. Establishment of leading research centers and areas of focus: Bach A.N., Kizel A.R., Gulevich V.S., Parnas Ya.O., Engelhardt VA, Braunstein, A.E., Oparin, A.I., Belozersky, A.N., Severin S.E., Ashmarin I.P.Development of Enzymology at Moscow State University Mv Lomonosov, First MGMU them. THEM. Sechenov, Institute of Biomedical Chemistry. V.N. Orekhovich, Institute of PCB them. A.N. Belozersky MSU, FIT Biotechnology RAS.The main areas of medical enzymology: enzymopathology, enzymodiagnostics, enzyme therapy, engineering enzymology. Basic concepts. Classification of enzymopathies: primary (hereditary), secondary (acquired: alimentary and toxic). Goals of enzymatic diagnostics: early diagnosis, differential diagnosis, assessment of the dynamics of the disease, assessment of the effectiveness of treatment, assessment of the effectiveness of recovery, assessment of the prognosis of the disease. Enzymotherapy: replacement therapy and comprehensive. Engineering Enzymology. The use of immobilized enzymes in the food, chemical, pharmaceutical industry and medicine.
Mechanisms of enzymatic catalysis and regulation of enzyme activity	Biocatalysts. Enzymes and ribozymes. Chemical and biological catalysis (common aspects and differences). Mechanism of action. Kinetics of chemical reactions. Michaelis constant. The structure and properties of enzymes as protein molecules. Coenzymes and their relationship with vitamins. Principles of regulation of enzyme activity. Inhibitors and activators of enzymes. Isozymes. Classification and nomenclature of enzymes.
Engineering Enzymology	Fundamental and applied aspects of engineering enzymology. The main directions of development. Enzyme engineering. Rational design and directed enzyme evolution. Rational design of industrial enzymes. Site-specific mutagenesis. Ways to obtain enzymes with a stable conformation and activity: a hydrophobic core stabilization, reduction of the polypeptide chain mobility, substitution of amino acid residues in the active center. Directed evolution of enzymes: creation of a library of mutated enzyme genes,

	gene expression in a microbial host, recombination of genes encoding enzymes with improved properties. Method of computer molecular design (molecular docking technology): successes and prospects. The creation of heterogeneous catalysts based on immobilized enzymes and cells. Immobilization of enzymes. Microencapsulation and inclusion of enzymes in liposomes. The use of immobilized enzymes in the food and pharmaceutical industries. Production of medicines (antibiotics: penicillins, cephalosporins, tetracyclines, erythromycins**).** Production of 6-aminopenicillanic acid using penicillin amidase. Immobilized enzymes for medicine: streptokinase, trypsin, chymotrypsin, subtilisin, collagenase. Creating Smart Biocatalysts - enzymes associated with polymers, the structure of which reversibly changes in response to the action of certain factors (temperature, pressure, pH, ionic strength, magnetic field).
Enzymes, isoenzymes and their role in the diagnostics of internal organs pathologies	Factors underlying enzymodiagnostics: uneven distribution of enzymes in tissues, the presence of organ-specific enzymes. Myocardial infarction: an increase in serum creatine kinase (CK), lactate dehydrogenase (LDH), aspartate aminotransferase (AST) and alanine aminotransferase (ALT). The dynamics of changes in the activity of these enzymes. Definition of isoenzymes LDH1, LDH2 and CK (MM and MB), inherent in the cardiac muscle, as a more informative analysis compared to the measurement of enzymatic activity. Enzymodiagnostics of liver diseases. Relationship of the elevation on activity of organ-specific hepatic enzymes with the metabolic processes in the liver. Dynamics of changes in the activity of ALT and AST in the serum in liver diseases. The diagnostic value of the determination of isoenzymes LDH4, LDH5 and hepatic alkaline phosphatase. Changes in the activity of diagnostically significant enzymes in the blood serum in diseases of the pancreas, bone tissue, muscles, prostate. Methods for obtaining purified enzyme preparations. Ultracentrifugation. Chromatography: ion-exchange, adsorption, gel filtration, affinity (biospecific), high-performance liquid. Electrophoretic methods. Membrane methods, ultrafiltration.
Laboratory tests for determination of enzyme activity in the clinical practice	Determination of enzyme activity for use in clinical practice for the purpose of establishing a diagnosis; differential diagnosis; assessment of the dynamics of the disease; monitoring of ongoing therapy. Methods for determining the activity of enzymes: single-point and multipoint kinetics, etc. Methods for determining the concentration of product or substrate (direct photometry, staining of the substrate or product with a dye, Warburg Test). Methods for determining the activity of individual enzymes used in clinical practice (AST, ALT, LDH, CK, ALKP, ASP, CHE, amylase). ELISA (classification and principle of the method). Enzymes used in ELISA as labels.

Enzymes used for replacement therapy in patients with pancreatic insufficiency	Compounds secreted by the pancreas. Classification of pancreatic enzymes. Characteristics of individual enzymes: composition, activation mechanism, mechanism of action, substrate specificity. Possible causes of pancreatic insufficiency. Classification of enzymes used in pancreatic insufficiency: enzymes of animal and plant origin, mono- and multienzyme preparations. Characteristics of individual multienzyme preparations: composition, dosage forms, aspects of production and action, degree of purification; comparison of composition and enzymatic activity of components.
Enzymes used in cosmetology and dermatology	The history of the use of enzymes in cosmetology and dermatology. Classification of enzymes used in cosmetology and dermatology. Proteolytic enzymes of animal origin - trypsin, chymotrypsin, pancreatic ribonuclease, collagenase and deoxyribonuclease, hyaluronidase; bacterial origin - collagenase, α-amylase, streptokinase, deoxyribonuclease, subtilisin, keratinase; of plant origin - ficin (from the juice of figs), bromelain (from bromeliad family plants, including pineapple), papain (from papaya fruit and melon tree leaves). The concept of cosmetic enzymology. Enzyme-based hair removal, correction of local fat deposits with the help of enzymes. Enzymes in clinical practice: nucleases, lyases, immobilized enzyme preparations, combined enzyme preparations.
Thrombolytic enzymes and blood coagulation factors	The concept of thrombolysis. The mechanism of thrombolysis. Thrombolytic enzymes: plasminogen, plasmin, tissue plasminogen activator. Thrombolytic drugs: urokinase, streptokinase, alteplase, reteplase, monteplase, lanoteplaza, palmyplaza, thrombovazim. Blood coagulation factors: structure, functions, mechanism of action, methods of activity regulation.
Hereditary deficiencies of enzymes	The concept of orphan diseases and orphan drugs. General principles of diagnosis and treatment of hereditary metabolic disorders. Enzyme replacement therapy. Disorders of carbohydrate metabolism: glycogenosis, galactosemia (biochemical pathogenesis, clinical presentation, diagnosis, treatment). Amino acid metabolism disorders: phenylketonuria, tyrosinemia, alkaptonuria, albinism, maple syrup disease, homocystinuria (biochemical pathogenesis, clinical presentation, diagnosis, treatment). Lysosomal storage disorders: Niemann-Pick disease, Gaucher disease, Fabry disease, Tay-Sachs disease (biochemical pathogenesis, clinical presentation, diagnosis, treatment). Disfunction of the ornithine cycle. Disorders of bile acids metabolism. Porphyrin metabolism disorders: acute intermittent porphyria. Disorders of purine and pyrimidine metabolism: Lesch-Nyhan syndrome. Disorders of steroid metabolism: congenital adrenal hyperplasia.
Enzymes used in the treatment of cancer	Classification of enzymes with antitumor activity, as shown in clinical and experimental research. L- asparaginase: sources, mechanism of action, products on the market, features of clinical use, side effects. The role of glutaminase activity in the realization of the therapeutic effect and toxic action of L- asparaginase. The effect of pegylation on the effectiveness of L- asparaginase. The role of asparagine synthetase in tumor sensitivity determination to L-

	asparaginase.
Enzymes of purine and pyrimidine metabolism as targets for antitumor therapy	Dihydrofolate reductase and its inhibitors: methotrexate, pemetrexed, raltitrexed (mechanism of action, indications for use, features of clinical use). Thymidylate synthase and its inhibitors: fluorouracil, capecitabine, tegafur (mechanism of action, indications for use, features of clinical use). DNA polymerase and its inhibitors: cytarabine (mechanism of action, indications for use, features of clinical use). Ribonucleotide reductase and its inhibitors: gemcitabine (mechanism of action, indications for use, features of clinical use). Ribonucleotide reductase and its inhibitors: cladribine, fludarabine (mechanism of action, indications for use, features of clinical use). Topoisomerases and their inhibitors: irinotecan, topotecan, etoposide, doxorubicin (mechanism of action, indications for use, clinical features).
Enzymes of Human Immunodeficiency Virus and Hepatitis C Virus as targets for antitumor therapy	HIV reverse transcriptase and its inhibitors: nucleoside / nucleotide analogues: abacavir, emtricitabine, lamivudine, zidovudine, tenofovir; non-nucleotide inhibitors: efavirenz, nevirapine, etravirine, rilpivirin (mechanism of action, indications for use, clinical features). HIV protease and its inhibitors: atazanavir, darunavir, fosamprenavir, lopinavir, ritonavir, saquinavir, tipranavir (mechanism of action, indications for use, features of clinical use). HIV integrase and its inhibitors: raltegravir, dolutegravir, elvitegravir (mechanism of action, indications for use, features of clinical use). Hepatitis C virus NS 3/4 A protease and its inhibitors: asunaprevir, boceprevir, paritaprevir, simeprevir, telaprevir (mechanism of action, indications for use, features of clinical use). RNA polymerase NS 5 B of the hepatitis C virus and its inhibitors: dasabuvir, sofosbuvir (mechanism of action, indications for use, features of clinical use)
Target Enzymes for the Treatment of Cardiovascular Diseases	HMG-CoA reductase inhibitors (statins). Angiotensin-converting enzyme (ACE) inhibitors. Effect of ACE inhibitors on endothelial function and oxidative stress. Endothelial NO synthase. Drugs that reduce the formation of pro-oxidant factors by acting on the sources of their formation (lipoxygenase blockers); Drugs that increase the activity and power of antioxidant enzymes (superoxide dismutase). Cytoprotectors used in cardiology: inhibitors of carnitine-palmitoyltransferase (perhexylin, etomoxir, oxfenicin, aminocarnitine); fatty acid β-oxidation inhibitors (trimetazidine, ranolazine); pyruvate dehydrogenase stimulants (dichloroacetate, left carnitine); drugs with other mechanisms of action (cocarboxylase)).
Target Enzymes for Anti-Inflammatory Drugs	Mechanisms of development and forms of inflammation. Cycloxygeneses and their inhibitors: salicylates, pyrazolidines, derivatives of indole acetic acid, derivatives of phenylacetic acid, oxicam, alkanones, derivatives of sulfonamide (mechanism of action, indications for use, features of clinical use). The role of mTOR kinase in the development of inflammation. Inhibitors of mTOR.
Tyrosine kinases that regulate tumor progression as targets for chemotherapy of malignant tumors	The concept of a molecular target with which the drug interacts. Tyrosine kinases are enzymes that transfer phosphate group to the tyrosine residues of proteins. Effective target drugs that reduce the activity of tyrosine kinases in tumors. Biochemical mechanisms of tyrosine kinase activity regulation by small molecules -

	prototypes of new drugs. Experimental approaches to demonstrate targeting.

Developers:

Professor
of the Temirbolat T. Berezov Department of Biochemistry PhD, DSc, Elena V. Kalinina

Associate Professor
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Assistant Professor
of the Temirbolat T. Berezov Department of Biochemistry MD, Marsel M. Basharov

Program Director
Professor of the Temirbolat T. Berezov Department
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Head of the Temirbolat T. Berezov Department
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Basics of Integrative Medicine**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
An introduction to integrative medicine	The body from the standpoint of modern medicine. Disease from the perspective of modern medicine Views on the origin of diseases: Euro-American and Indo-Chinese concept.
Scientific and practical aspects of the system integrative medicine	Biochemical portrait of a healthy and sick person. Connective tissue is the main morpho-functional a link in the development of diseases in a living organism. The main proteins of connective tissue are collagen and elastin. Synthesis. Properties. Multilevel system-cybernetic organization connective tissue component. Multiple dysplasias - the basis for a deeper analysis of human health.
Strategy and tactics treatment process in system of integrative medicine	Integrated treatment regimens, medical rehabilitation and disease prevention Integrative Treatment Principles: Medium, consistency, metabolism.
Homeopathy in the system integrative medicine	Modern concepts of the extracellular matrix. Changes in the phase states of the matrix (sol-gel), due to the action of the enzyme hyaluronidase. On the integration of the methods of allopathy and homeopathy. About the method of allopathy and homeopathy. On the integration of the methods of allopathy and homeopathy.

Developers:

Associate Professor
Department of Nursing Management — Skalny V.V.

Senior Lecturer
Department of Nursing Management — Umnova T.N.

Head of the Department
Department of Nursing Management — Radysh I.V.

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Economics**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction	Subject, method and functions of economics. Wants, resources and goods. Limits, alternatives and choices. Production, distribution, exchange, consumption. Coordination of economic activities. Main directions of economic theory and their evolution. Economic systems and their classification. Definition of market and market economy. Actors of market economy. Terms of market economy operation. Competition as a key element of market model. Structure and infrastructure of market economy
Microeconomics	Market of goods and services. Supply and demand. Consumer behavior. Theory of firms. Market structure. Market failures.
Macroeconomics	Subject of macroeconomics. National economy as a whole. Main macroeconomic issues. GDP and ways of measuring. Features of GDP. Inflation. Employment and unemployment. Business cycle and economic growth. Fiscal and monetary policies
World economy	World economy and economic relations. Globalization. Place of Russia in world economy

Developers:

Associate professor
Candidate of Economic Sciences Kh.V. Tyrkba

Head of the Political Economy
Department
Professor, Doctor of Economics E.V. Ponomarenko

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ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Topical Issues of Neonatology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Perinatal asphyxia, hypoxic-ischemic encephalopathy (HIE) and its consequences. Birth trauma.	Perinatal asphyxia: etiology, pathogenesis, diagnostic criteria, classification. The Apgar scale. Clinical picture. HIE. Classification of Sarnat. Lesions of internal organs during asphyxia of newborns (meconium aspiration syndrome, persistent pulmonary hypertension, necrotizing enterocolitis, acute renal injury). Features of hypoxic brain damage in premature infants (intraventricular hemorrhages, periventricular leukomalacia). Therapy. Primary resuscitation of newborns. Forecast. Consequences of HIE. Infantile cerebral palsy. Attention deficit hyperactivity disorder. Birth trauma: etiology, pathogenesis. Birth trauma of the skin and subcutaneous fat, the musculoskeletal system, internal organs, the central (brain, spinal cord) and peripheral nervous system. Types of intracranial hemorrhages. Diagnostics. Therapy. Prevention. Forecast. Consequences of perinatal lesions of the nervous system of traumatic origin.
Respiratory diseases of newborn children	Respiratory distress syndrome of newborns. Bronchopulmonary dysplasia (BPD). Congenital pneumonia. Apnea. Reasons. Frequency. Etiology. Classification. Pathogenesis. The clinical picture. Diagnostic criteria. Differential diagnosis. Therapy. Prevention.
Localized purulent-inflammatory diseases of the newborns. Skin diseases of newborns.	Clinical forms of localized infections (infections of the skin and subcutaneous fat, omphalitis, osteomyelitis, arthritis, conjunctivitis). Predisposing factors. Etiology. Epidemiology. Classification. Pathogenesis. The clinical picture. Diagnostics. Diagnostic criteria. Therapy. Forecast. Prevention. Diaper dermatitis. Seborrheic dermatitis. Etiology. Classification. Pathogenesis. The clinical picture. Diagnostics and differential diagnostics. Therapy. Prevention. Forecast.

Developers:

Associate Professor
Department of Pediatrics — Illarionova T. Yu.

Head of the Department
Department of Pediatrics — Ovsyannikov D. Yu.

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Basics of Child Nutrition**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Healthy baby food	Definitions regarding infant feeding. Principles of nutrition for children. Properties and composition of the female breast milk. Benefits of breastfeeding feeding. The value of nutrition in the first year of life for subsequent human health. Physiology of lactation. Actions and methods to help and interfering with breastfeeding. Technique breastfeeding. Support Principles (Successful) breastfeeding in the WHO program "Hospital, child-friendly". Consulting on breastfeeding. Contraindications to breast feeding and early attachment of the child to breasts. Causes, signs, prevention and treatment hypogalactia. Definition, reasons, rules and timing introduction of complementary foods. The principles of artificial and mixed feeding. The principles of adapting infant formula. Classification of milk mixtures. Nutrition for children over the age of one year
Hypotrophy. Protein energy failure. Delay nintrauterine development fetus	Kwashiorkor. Alimentary insanity. Malabsorption. Paratrophy. Etiology. Pathogenesis. Classification. The clinical picture. Diagnostics. Therapy. Forecast. Prevention. Long-term consequences.
Metabolic disorders vitamins. Hypo-Hypervitaminosis	Rickets. Hypervitaminosis D. Etiology. Pathogenesis. Classification. The clinical picture. Diagnostics. Therapy. Forecast. Prevention. Remote effects.

Developers:

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Head of the Department
Department of Pediatrics — Ovsyannikov D.Yu.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Outpatient Cardiology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
Characteristics of the main cardiovascular agents.	ACE inhibitors. General characteristics and place in therapy. Classification of ACE inhibitors. Features of use of some preparations. Complications and limitations to use. Sartans. Sakibuthril / valsartan. Beta-blockers. Characteristics of the group. Cautions and complications of beta-blocker therapy. Nitrates. Characteristics of nitrates. Place nitrates in therapy. Complications and cautions when using. Nicorandil. Calcium channel blockers (BCC). Dihydropyridine BCC. Complications with dihydropyridines. Pulse-thinning BPC. Alpha-1-adrenoblockers. Diuretics. Loop diuretics. Thiazides and similar diuretics. Antagonists of aldosterone. Potassium-sparing diuretics. Inhibitors of carbonic anhydrase. Antihypertensive drugs of central action. Cardiac glycosides. Mechanism of action and effects. Place in modern therapy. Complications and contraindications for use. Antiarrhythmic drugs (AAP). AARP IA class. AARP IB class. AAS class IC. AARP class II. AARP class III. AARP class IV. Other AARPs. Antithrombotic agents. Antiaggregants, anticoagulants. Lipid-lowering drugs. Statins. Fibrates. Ezetimibe. A nicotinic acid. Final interview on the section.
Rational pharmacotherapy of cardiovascular diseases in outpatient practice.	Arterial hypertension (AH). General issues. Rational pharmacotherapy. AH in pregnancy and lactation. Resistant hypertension. Pulmonary hypertension. Pharmacotherapy of hypertensive crises. Ischemic heart disease (CHD). Angina pectoris. General issues. Rational pharmacotherapy of angina pectoris. Variable angina pectoris (Prinzmetal angina). Microvascular angina pectoris (syndrome X).

	Chronic heart failure (CHF). General issues. Rational pharmacotherapy. Heart rhythm disturbances. Sinus tachycardia. Isolated sinus tachycardia. Extravital extrasystole. Ventricular extrasystole. Reciprocal AV-node tachycardia. Atrial fibrillation. Atrial flutter. Ventricular tachycardia. WPW-syndrome. Final interview on the section.
Some features of outpatient management of cardiac patients	Indications for consultation of a cardiologist and necessary studies before consultation. AH, angina of tension, CHF. Atrial fibrillation. Atrial flutter. Other rhythm disturbances. Postponed myocardial infarction, coronary angioplasty, aorto-coronary bypass. Final interview on the section. Final interview on discipline.

Developers:

Professor Assistant (Docent)
Department of General Practice — A.V. Syrov

Professor Assistant (Docent)
Department of General Practice — G.N. Kobylyanu

Head of the Department
Department of General Practice — N.V. Sturov

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Examination of Temporary Disability**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Contents of topics**
The normative base of examination of temporary disability (ETD).	The main legislative and regulatory instruments for the examination of disability.
ETD in various diseases and conditions.	ETD in diseases of the cardiovascular system, nervous system, respiratory system, obstetric practice, medicine, surgery, traumatology and orthopedics, pediatrics. Estimated time of disability.
The methodology of the organization of ETD in a medical organization.	Practical aspects of registration and issuance of sick leaves in the outpatient and inpatient facility. Mandatory accounting and operational documentation for ETD in a medical organization.
The role of the Medical Commission at ETD.	The technology of carrying out examination of temporary disability by self-employed physician and in medical organizations: issues of temporary disability in the work of the Medical Commission. Controversial and complex cases of ETD.
Criteria and technology of direction on MSE (medico- social examination).	The selection criteria for medico-social examination, technology of directions for the MSE and the registration of medical certificate during the disability.
Legal liability under ETD.	Medical error at ETD. Classification and analysis. Legal liability of medical institution, it's head and a doctor.

Developers:

Professor Assistant (Docent)
Department of General Practice — E.I. Rusanova

Head of Department
Department of General Practice — N.V. Sturov

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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Propaedeutics of Internal Diseases**
The amount of discipline	**10 CU (360 hours)**
Course Description	
Topics	**Content of topics**
Methods of physical examination of the patient	General condition, consciousness, position, antropometry, skin and mucus layers, lymphatic nodes, muscular system, joints
Examination of a patient with lung diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (pneumonia, COPD, bronchial asthma)
Examination of a patient with cardiovascular diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (arterial hypertension, coronary heart disease, heart failure, atherosclerosis, rheumatic fever, valvular heart diseases)
Examination of a patient with gastrointestinal tract diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (gastritis, ulcer, bowel diseases)
Examination of a patient with liver diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (hepatitis, cirrhosis, cholecystits, gall stone disease)
Examination of a patient with kidney diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (pyelonephritis, glomerulonephritis, chronic renal failure, chronic kidney disease, acute kidney injury)
Examination of a patient with hemopoietic organs diseases	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (anemia, leukemia)

Examination of a patient with endocrinologic disorders	Main complaints, physical examination (inspection, palpation, percussion, auscultation). Instrumental methods, laboratory methods. Main clinical syndromes. Main diseases (thyroid gland diseases, diabetes mellitus)

Developers:

Assistant of the Department of Internal Medicine
with a course of cardiology and functional diagnostics — Avdoshina S. V.

Head of the Department of Internal Medicine
with a course of cardiology and functional diagnostics — Kobalava Zh. D.

Federal State Autonomous Educational Institution of Higher Education
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Medical Institute

ANNOTATION OF ACADEMIC DISCIPLINE

Educational program
31.05.01 General Medicine

The name of the discipline	**Medical Elementology**
The amount of the discipline	**2 CU (72 hours)**
Course Description	
Topics	**Content of topics**
Introduction to medical elementology	1. Subject of medical elementology. Biological classification of chemical elements. Concept of bioelements. 2. Biogeochemistry and factors affecting the elemental status of population. 3. New paradigm of nutrition and therapy.
General elementology	4. Factors affecting the homeostasis of trace elements. Interactions between trace elements. 5. Elemental status of humans. Personalized assessment of human elemental status.
Special elementology	6. Essential trace elements (iron, zinc, copper, manganese, chromium, cobalt, molybdenum, selenium, iodine): role in the body; absorption; excretion; deficiency and toxicity; associated diseases; sources. 7. Conditionally essential trace elements (lithium, strontium, vanadium, nickel, tin, silicon, fluorine): role in the body; absorption; excretion; deficiency and toxicity; associated diseases; sources. 8. Toxic and potentially toxic trace elements (arsenic, aluminum, lead, cadmium, mercury): role in the body; absorption; excretion; toxicity; associated diseases; sources. 9. Macroelements (potassium, sodium, calcium, magnesium, phosphorus, sulfur, chlorine): role in the body; absorption; excretion; deficiency and excess; toxicity; associated diseases; sources. 10. Elements-organogens (carbon, oxygen, nitrogen, hydrogen): role in the body; absorption; excretion; associated diseases; sources.
Role of chemical elements in diagnostics and treatment of human diseases	11. Imbalances of chemical elements at various diseases: diseases of the skin and its appendages, diseases of the musculoskeletal, broncho-pulmonary, immune, endocrine, cardiovascular

	systems, childhood diseases, trace elements in oncology and hematology.

Developers:

Senior lecturer of the Department of Medical Elementology A.A. Skalny

Head of the Department of Medical Elementology A.V. Skalny