

**ANNOTATIONS TO SYLLABUS  
FOR SPECIALTY 31.05.01 "GENERAL MEDICINE"**

Approved by the order of the Ministry of Education and Science of the Russian Federation 12.09.2013 № 1061.

The syllabus of educational program "Medicine" is designed in 2013 г. in accordance with the requirements of the FSES HPE by the order of the Ministry of Education and Science of the Russian Federation №1118, November 08, 2010.

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*Federal State Autonomic 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**

<b>The name of the discipline</b>	<b>Philosophy</b>
<b>The amount of discipline</b>	<b>5 CU (180 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Philosophy and other types of worldview	Philosophy and wisdom. Philosophy and everyday thinking. Philosophy and mythology. Philosophy and private science. Philosophy and religion.
The boundaries of knowledge and features of knowledge of reality	Objective and subjective knowledge. Mayeutics Socrates. Sophists and skeptics about objective knowledge. Francis Bacon and the "idols of consciousness." The method of doubt R. Descartes. Science and objective knowledge. Verification and falsification (K. Popper).
Consciousness and unconscious. Philosophical Anthropology	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 being and the foundations of human existence.	Materialism and idealism about reality. Objective and subjective idealism. Determinism and indeterminism. The concept of free will. Fatalism. Existentialism about free will.
Philosophy of morality and ideals of human life	Moral and legal regulations. The concept of justice. Selfishness, rational selfishness and individualism. The golden rule of morality. I. Kant's ethics and utilitarianism. Ethical problems of the death penalty.
Social philosophy: the ideals of a just society	Plato on ideal and imperfect states. Social ideals of K. Marx. The concept of alienation. Democratic principles of justice. The concept of progress. Scientific, technical and social progress. Industrial and post-industrial societies.

**Developers:**

Associate Professor of the Department of Social Philosophy  
Head of the Department of Social Philosophy

Rudanovskaya S.V.  
Grechko P.K.

*Federal State Autonomic 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**

<b>The name of the discipline</b>	<b>Bioethics</b>
<b>The amount of discipline</b>	<b>2 credits (72 Hours.)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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:**

Senior Lecturer of the Department of Ethics

Savvina O.V.

Head of the Department of Ethics

Tsvyk V.A.

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

*Law Institute*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Law Science</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Fundamentals of the theory of state and law.	Topic 1.1 The concept, features, functions of the state. State: theory of origin, features, functions.
	Theme 1.2 Forms of the state. The concept of the form of the state. Form of government: monarchy and republic. Form of government: unitary state, federation, confederation. Political regimes. The concept and form of democracy. Legal state and civil society.
	Topic 1.3 Law in the system of social regulation. The concept of social norms. Types of social norms. The ratio of law and morality. Signs and functions of law.
	Topic 1.4 Rules and sources of law. The concept of legal norms, its structure and types. Types of sources of law. Regulatory act as a source of law. The effect of legal acts in time, space and circle of persons.
	Theme 1.5 Law system. The concept of the system of law, its elements. Branch of Law and Legal Institute. The main branches of modern Russian law: family, labor, civil, criminal, administrative. The main legal systems of our time. International law as a special system of law.
	Topic 1.6 Relationship. The concept of the relationship. The structure of legal relations. Subjects of legal relations, their types. Legal capacity, capacity, delictual status of legal entities. Legal facts, their types.
	Topic 1.7 Offenses and legal liability. The concept and types of offenses. The composition of the offense. Presumption of innocence. Legal liability, its types. The value of law and order in modern society.
	Topic 2.1 The Constitution, its role and place in the legal system of the Russian Federation. Concept, signs of the constitution. Stages of the constitutional development of Russia. The concept of the foundations of the constitutional order. The main characteristics of the Russian

<p>The Constitution of the Russian Federation - the basic law of the state.</p>	<p>Federation. Features of the federal structure of Russia.</p> <p>Topic 2.2 Legal status of a person and a citizen of the Russian Federation. The concept of the legal status of a person and a citizen. Rights, freedoms and duties of a person and a citizen of the Russian Federation. The concept of citizenship. Legal mechanisms for the protection of the rights and freedoms of man and citizen.</p> <p>Topic 2.3 The system of public authorities in the Russian Federation. The concept and types of government agencies. The principle of separation of powers, its content and meaning. The electoral system: the concept and types. The electoral process in the Russian Federation. President of the Russian Federation: elections, powers, status. The Federal Assembly of the Russian Federation is the legislative power. The order of formation, structure, authority. The legislative process in the Russian Federation. The government of the Russian Federation is the highest executive body. Executive authorities of the Russian Federation. The judicial system of the Russian Federation: structure, links, instances. The procedure for consideration of litigation. Principles of justice in the Russian Federation.</p> <p>Topic 2.4 Law enforcement agencies in the Russian Federation. Prosecutor's Office of the Russian Federation: structure, competence. Prosecutor supervision. Bar: concept and objectives. Types of legal assistance provided by lawyers. Notariate: concept, tasks, organization of activity. Powers of a notary. The Ministry of Internal Affairs of the Russian Federation and its territorial bodies.</p>
<p>Characteristics of the branches of the Russian legal system.</p>	<p>Topic 3.1. Basics of Family Law of the Russian Federation. The concept of marriage, the conditions of its conclusion, termination, invalidation. Personal and property relations between spouses, parents and children. Family Law Responsibility. Forms of education of children left without parental care.</p> <p>Topic 3.2. Fundamentals of civil law of the Russian Federation. The concept of civil relations. Individuals and legal entities. Property rights. Obligations in civil law and liability for their violation. Inheritance law.</p> <p>Topic 3.3. Fundamentals of labor law of the Russian Federation. Labor contract. Labor discipline and responsibility for its violation. Wage. Working time and rest</p>

time. Features of labor of minors.
Topic 3.4. Fundamentals of criminal law of the Russian Federation. The concept of crime. Criminal liability. Types of criminal punishment. Juvenile criminal liability
Topic 3.5. Fundamentals of administrative law of the Russian Federation. Administrative offense and administrative liability.
Topic 3.6. Fundamentals of Environmental Law Objects of legal environmental protection. Subjects of environmental law, their rights and obligations. Legal liability for environmental offenses.
Topic 3.7. Basics of Medical Law

**Developers:**

Senior Lecturer at the Department of Judiciary,  
law enforcement and human rights activities

Mustafaeva MM

Professor of the Department of Judiciary,  
law enforcement and human rights activities

Sangadzhiev B.V.

Head of the Department of Judiciary,  
law enforcement and human rights activities

Grebennikov V.V.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>		<b>History of Medicine</b>
<b>The amount of discipline</b>		<b>3 CU (108 hours)</b>
<b>Course Description</b>		
<b>Topics</b>		<b>Content of topics</b>
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. Medicine in Ancient Rome.
3	Medicine during Middle Ages (V–XV centuries)	3.1. Medicine in the Byzantine Empire. 3.2. Medicine in Medieval Rus (IX–XV centuries). 3.3. Medicine in the Caliphates (VII–X centuries). 3.4. Medicine in Middle and Central Asia (X–XV cc.). 3.5. Medicine in Medieval Western Europe (V–XV centuries).
4	Medicine of the 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	Biological sciences and Medicine 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 Times (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)

**Developers:**

Head of the history of medicine course

Sorokina T.S.

*Federal State Autonomic 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**

<b>Name of the discipline</b>	<b>National of History</b>
<b>Amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Discipline Summary</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>The science of history</b>	The subject and objectives of the course. The science of history. Social, political and socio-natural history. Periodization of the world-historical process. Civilizational, culturological and formational approaches to the history of humanity.
<b>Ancient Russia</b>	The problem of ethnogenesis of the Eastern Slavs; the main stages of formation of the old Russian state and its socio-political system; the most important events of domestic and foreign policy of Kievan Rus, their causes, nature and consequences; the main monuments of ancient culture IX – early XII century.
<b>Feudal fragmentation and struggle for independence</b>	Prerequisites of political fragmentation, its essence and consequences; the evolution of the East Slavic statehood to the beginning of the XII century.; features of the largest centers of Russia of this period: Vladimir-Suzdal and Galicia-Volyn principalities, Novgorod Republic; the main events related to the struggle of Russia against foreign invaders in the XIII century.; the consequences of the Mongol invasion and the influence of Mongol rule on the development of Russian lands
<b>Formation of the Russian united state</b>	Prerequisites and features of the formation of a single Russian state; the most important events associated with the rise of the Moscow Principality in North-Eastern Russia (XIV – mid XV century.); the main events of the final stage formation of a united Russian state, its socio-political, economic and spiritual development; features of domestic and foreign policy of Ivan III.
<b>Russia in the XVI century. Ivan the Terrible</b>	The main events of the final stage formation of a united Russian state, its socio-political, economic and spiritual development; features of domestic and foreign policy of Ivan III and Vasily III; features of the reign of Ivan IV; reforms of the Elected Rada; the causes and consequences of oprichnina; the main directions of foreign policy of the Moscow state in the XVI century., the characteristic features of Russian traditional culture and its achievements in this period
<b>Time of Troubles and the beginning of Romanov's reign</b>	The causes, chronology and main events of the Time of Troubles, their consequences; the political development of the country during the first Romanovs, the beginning of the absolute monarchy; tasks and results of Russia's foreign policy in the XVII century.; features of socio-economic and spiritual development of Russia in the XVII century.; new features in the economy of the

	country; the social structure of Russian society; stages of registration of serfdom; manifestations of social protest in this period, their causes and consequences; the split of the Russian Orthodox Church
<b>Peter I and his age</b>	The need for Peter's reforms and the beginning of modernization of the country; the main directions of domestic policy of Peter I and its consequences; foreign policy in the era of Peter I; achievements of Russian culture in this period.
<b>The age of Palace coups</b>	Features of the era of Palace coups, its causes, nature and consequences.
<b>The Russian Empire in the second half of the XVIII century</b>	The essence and the most important features of the policy of "enlightened absolutism"; the main reforms of Catherine II; the main trends of socio-economic development of the country, the contradictions of class policy; objectives and results of Russian foreign policy of the second half of the XVIII century.; achievements of Russian culture of this period
<b>Russia in the first quarter of the XIX century. Paul I. Alexander I. Patriotic war of 1812</b>	Socio-economic development of Russia by the beginning of the XIX century, features of domestic and foreign policy of Paul I, features of domestic and foreign policy of Alexander I and the main results of his reign
<b>Decembrists movement. Reign of Nicholas I</b>	Prerequisites, goals, organizations, policy participants of the Decembrist movement; the most important events of domestic and foreign policy of Nicholas I; protective, liberal and radical directions of social movement in the second quarter of the XIX century; the main achievements of Russian culture in the first half of the XIX century.
<b>Alexander II and the era of reforms</b>	Prerequisites, essence and importance of reforms of Alexander II; features of socio-economic development of post-reform Russia; social movement of the 1850s – early 1880s.: ideology, organizations, participants; main directions, goals and results of foreign policy of Alexander II
<b>Russian Empire during the reign of Alexander III</b>	Features of domestic and foreign policy of Alexander III; social movement; world importance of Russian culture in the second half of the XIX century.
<b>Features of the development of capitalism in Russia (the last quarter of the XIX century.)</b>	Tasks of modernization in Russia; development of capitalism in Russia; reforms of S. Witte
<b>Russian Empire in the beginning of XX cent. Nicholas II.</b>	The essence of the internal policy of Nicholas II; reform projects of the early XX cent.; social movement; the main political parties, their classification, leaders and program settings; especially the formation of Russian parliamentarism; the results and significance of the revolution; the main events of Russian foreign policy at the turn of XIX–XX centuries.; the causes of the First world war and the goals of the parties; attitude to the war in society; the results and consequences of the war.
<b>Revolutions in Russia</b>	The causes, character, main events and participants of the first Russian revolution (1905-1907); the causes of the February revolution; the overthrow of the autocracy; the activities of the Provisional government and the Soviets; the leaders and policies

	of the main political parties in 1917; the causes of the coming to power of the Bolsheviks; the essence of the first decrees of Soviet power; the transformation of the Bolsheviks in the sphere of public administration, economy and foreign policy, addressing national and social issues; the convening and dissolution of the Constituent Assembly
<b>Domestic policy of Soviet Russia and the USSR in the prewar period</b>	Results and consequences of the Civil war and intervention (1918-1920); the main activities of the policy of "war communism"; the reasons for the victory of the Bolsheviks; peculiarities of the national policy of the Soviet power, the formation of the USSR, the folding of the one-party political system; the nature and results of the NEP, the policy of industrialization, collectivization and cultural revolution; the main features and consequences of a regime of personal power of Stalin.
<b>The USSR during the great Patriotic war (1941-1945)</b>	Changes in the international situation, the main directions, events of foreign policy of the USSR in the 1920s-1930s, their results and consequences; the most important international treaties concluded on the eve and in the initial period of the Second world war; expansion of the USSR in the prewar period; the most important events of the great Patriotic war; restructuring of the rear in a military way; the creation of the anti-Hitler coalition and international conferences of the allied powers during the war, the results and significance of the victory of the USSR.
<b>Postwar years. The beginning of Khrushchev's rule.</b>	The main trends of social and political life of the USSR, the tightening of the political regime and ideological control; features and results of socio-economic policy; changes in the international arena, the beginning of the "cold war", the important events of the foreign policy of the USSR in the postwar period
<b>Thaw as a special stage of development of the USSR.</b>	Changes in the top party leadership after Stalin's death, measures for de-Stalinization, democratization of the political system, contradictions of the domestic policy, the most important measures of socio-economic policy of G.M. Malenkov and N.S. Khrushchev, "thaw" in the spiritual sphere; new trends in international relations and changes in Soviet foreign policy, its main directions; the adoption of the principle of peaceful coexistence in international relations; the Caribbean crisis.
<b>USSR under L. Brezhnev</b>	Features of the political course of the country in 1964-1985, the strengthening of conservative trends, changes in the political system, the emergence of the dissident movement; economic reforms of the mid-1960s, their role and importance, the growing contradictions and imbalances in the economy; the development of the social sphere; achievements and problems in the development of culture; the transition from confrontation to détente, peace initiatives of the USSR, "Brezhnev doctrine", the aggravation of international tension at the turn of 70-80-ies.
<b>USSR in 1985-1991. Perestroika.</b>	Prerequisites and goals of perestroika, the essence and consequences of economic and political reforms; changes in the state structure; the concept of "new political thinking" in foreign policy; stages of Perestroika.
<b>Collapse USSR and the creation of CIS</b>	The collapse of the USSR and the formation of the CIS; the formation of a new Russian statehood; ways of socio-economic modernization of Russia; foreign policy in the 1990s.

<b>Formation of modern Russia. Vladimir Putin.</b>	The socio-economic modernization of Russia; the country's foreign policy at the beginning of the XXI century.
<b>The role of RUDN as a "soft power" in the international relations</b>	Peace initiatives of the USSR in the postwar period, especially the opening of the Peoples Friendship University in 1960, the mission of the University, especially the first rector – S. Rummyantsev, the second rector – V. Stanis, the third rector – V. Filippov.

**Developers:**

Professor of the Department of Russian History  
Head of the Department of Russian History

Grigorieva N.A.  
Kozmenko V.M.

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

*Faculty of Economics*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Title</b>	<b>Economics</b>
<b>Discipline volume</b>	<b>2 credits (72 ac. hours)</b>
<b>Course overview</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction.	The subject and method of economics. Historical analysis of economic schools, the economic systems of our time. The problem of efficiency. General characteristics of a market economy.
Microeconomics	Market of goods and services. Demand and supply/ Consumer behavior. Costs of production. Market structure: perfect and imperfect competition. Markets of resources
Macroeconomics	The main macroeconomic problems and indicators. Macroeconomic equilibrium. Model AD-AS. Economic growth and economic cycle. Inflation. and unemployment. Fiscal policy. Money-credit policy.
The world economy	World economy and international economic relations. Theories of international trade. Globalization.

**Developers:**

Associate professor of Political Economy Department  
Named after V.F. Stanis

Savinskiy A.V.

Head of the Department  
Named after V.F. Stanis

Ponomarenko E.V.

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Name of the Discipline</b>	<i>Russian Language (as a Foreign Language)</i>
<b>General labour intensity</b>	<b>3 credits (108 ac. hours)</b>
<b>General Content of the Discipline</b>	
<p><b>Aims:</b> The course focuses on the teaching and mastering of the medical students' general communicative and professional communicative competences.</p> <p><b>Objectives:</b> knowledge of, correct and adequate usage of general medical terminology; professional vocabulary and idioms; competence in effective general and professional communication with a Russian-speaking hospital personnel or clinical setting in the situations of interaction with patients and specialists; ability to work with professional documents; ability and willingness to realize, correctly interpret the Russian hospital culture concepts; ability and willingness to carry out professional mediation between Russian specialists and those from his native country.</p>	
<b>Sections of the disciplines</b>	<b>Summary of sections</b>
<b>UNIT 1. OBJECT AND ITS CHARACTERISTICS</b>	
<b>Theme 1.</b> The structure of an object	<p>Identification of components of an object Complete set of components: complete/incomplete set of components.</p> <p>Presence / absence of a component (components) in the structure of an object; Quantitative characteristics of components of an object.</p> <p>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</p> <p>Qualitative and quantitative composition of the object.</p>
<b>Theme 2.</b> Qualitative and quantitative characteristics, properties of the object	<p>The shape, relief of the surface of the object: the shape of the object; surface's relief of the object.</p> <p>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.</p>

	Quantitative characteristics of the object: the exact size of the object; fluctuations in the size of the object; maximum object size.
Theme 3. The function of the object	Function of the object. The essence of the function. Conditionality of the function of the object.
Theme 4. Classification of objects	Classes of objects. Characteristic of classification and classes of objects. Members of object's class.
<b>UNIT 2. BIOLOGICAL OBJECT (PATHOGENIC MICROORGANISM) AND ITS CHARACTERISTICS</b>	
<b>Theme 1.</b> 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.
<b>Theme 2.</b> 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.
<b>Theme 3.</b> 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.
<b>UNIT 3. PHYSIOLOGICAL PROCESS AND ITS CHARACTERISTICS</b>	
<b>Theme 1.</b> General characteristic of a physiological process	Definition of a process. Classification of processes. Essence of a process. Stages of a process.
<b>Theme 2.</b> 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).
<b>Theme 3.</b> Alteration dynamics of process	Alteration in the intensity of the process. Violation and termination of the process.
<b>Theme 4.</b> Role of the physiological process	The significance of the process. The characteristic of the benefit / harm of the physiological process for the organism.

**The developers are the associate professors of the Russian language department of Medical Institute V.B. Kurilenko, M.A. Makarova, Yu.N. Biryukova, K.V. Akhnina**

**The head of Russian language  
Department of Medical Institute**

**V.B. Kurilenko**

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

**Faculty of Philology**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Subject name</b>	<i>Latin Language</i>
<b>Volume of discipline</b>	<b>3 credits (108 hours)</b>
<b>Course description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b><u>Phonetics</u></b>	Latin alphabet. Letters and sounds. Vowels and consonants. Diphthongs and digraphs. Pronunciation and rules of reading. Syllables. Stress. Features of Latin and Greek Spelling.
<b><u>Anatomical and histological terminology</u></b>	Noun. System of declensions. Grammar categories. Dictionary entry. Non-agreed attribute. Nominative and Genitive singular. Adjective. Grammar categories. Dictionary entry. Agreement between adjectives and nouns. Agreed attribute. Structure of anatomical terms. Comparative and Superlative degrees. Peculiarities in anatomical terminology. Anatomical term with agreed and non-agreed attribute. Third declension. Equal and non-equal nouns. Types of the third declension. Generic endings of masculine, feminine and neuter genders of 3d declensions' nouns. Nouns of the 4-5 declensions. Basic case endings and features. Plural number of nouns and adjectives. Multiword anatomical term. Exceptions.
<b><u>Clinical terminology</u></b>	Word formation in anatomical and histological terminology. The most common base prefixes and suffixes. Introduction into clinical terminology. Multiword clinical term. Translation rules. Greek and Latin roots, denoting certain meanings. Beginning parts of clinical term.  1. Final parts of clinical term. Greek and Latin roots, denoting surgical operations and parts of the body. Greek and Latin roots, denoting anatomical formations. Final Greek parts, denoting disease, symptoms of the disease, pathological changes in organs and tissues, diagnosis and treatment methods. Greek and Latin roots, denoting various features and properties.

**Pharmaceutical terminology.**  
**Prescription.**

The concept of drug, drug dosage forms. Main rules of forming of pharmaceutical term. The frequency segments that are used in the names of drugs.  
Prescription. Rules and exceptions. Verbs' phrases in prescription line.  
Chemical nomenclature. Oxides and acids.  
Name of salts in pharmaceutical terminology.

**Developers:**

Associate Professor of the Department of Foreign Languages

Faculty of Philology

Borodin MA

Head of the Department of Foreign Languages

Faculty of Philology

Mikheev N.F.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Psychology &amp; Pedagogy</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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.
Psychoanalysis. Z. Freud.	The history of psychoanalysis. Freud and his theory. The development of psychoanalytic trends. Neofreudizm (K. Jung, A. Adler, K. Horney). Post-Freud personality psychology (G. Allport, G. Murray, E. Erickson).
The development of the psyche. Zoopsychology.	Zoopsychology from ancient times to the creation of the first evolutionary theory. The value of zoopsychology in medicine.
Feeling 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. Iatrogenii. Pathological forms of imagination. Types and functions of speech. The ratio of thinking and speech. Speech disorders.
Volition	Volition. The concept of the will. Volitional acts. Functions will. The development of the will of man. Willful 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 concept of personality in various psychological approaches. Personality structure. Levels, rules and methods for constructing psychological characteristics of a person.

The focus of the individual. Motives.	Analysis of general concepts about the orientation of the individual. Classification of needs in the orientation of the individual. Classification of motives in the direction of the individual. Definition of forms of orientation of the person.
Temperament. Character.	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.
Abilities The makings.	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 - patient; nurse - nurse; doctor - administration; doctor - junior medical staff;
Internal picture of the disease. Clinical aspects of communication.	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:**

Associate Professor of the Department of Psychiatry  
and Medical Psychology

Associate Professor of the Department of Psychiatry  
and Medical Psychology

Head of the Department of Psychiatry and Medical Psychology

Artemieva M.S.

Danilin I.E.

Belokrylov I.V.

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

*Faculty of Physical, Mathematical and Natural Sciences*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Physics</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Mechanical vibrations and waves.	Methods of physical measurements, fixing their results and assessing their accuracy. Basic laws of mechanics. Mechanical vibrations and waves. The dynamics of oscillatory motion. Acoustics. Doppler effect. Ultrasound and its use in medicine.
Molecular physics.	Molecular physics. The first law of thermodynamics. Thermodynamics of a living organism. Equilibrium and fluid movement. Surface phenomena. Hemodynamics. Breath.
Biopotentials.	Electrostatics. Electric dipole Characteristics of the electric field. Basics of electrocardiography. Biopotentials. Membrane potentials. Action potential
The electrical conductivity of biological tissues.	Laws and DC circuits. The electrical conductivity of biological tissues. Galvanization and electrophoresis.
Electromagnetism.	Electromagnetism. Electromagnetic induction. Alternating current. Impedance in the AC circuit. Impedance biological tissue.
Electromagnetic waves.	Perfect and real oscillating circuit. Electromagnetic waves. Electromagnetic wave scale.
Optics	Wave optics. Interference and diffraction of light. Resolution of the microscope. Lasers and holography. Polarization and dispersion of light. Absorption of light and fluorescence (application in microscopy). Photoelectric effect.
Atom and atomic nucleus.	Atomic structure and atomic nucleus. Elementary particles and their annihilation. X-ray and ionizing radiation. The impact of ionizing radiation on biological tissue. Ionizing radiation detectors. Radioactive methods in medicine. Dosimetry

**Developers:**

Associate Professor of the Department of  
heoretical Physics and Mechanics  
Head of the Department of Theoretical Physics and Mechanics

Kovalchukov N.A.  
Rybakov Yu.P.

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

**Faculty of Physical, Mathematical and Natural Sciences**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Mathematics</b>
<b>The amount of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to the analysis and differential calculus of functions of one variable.	The function is one variable. Limit function. Infinitely small and infinitely large functions. Comparison of infinitely small. Signs of the existence of limits. Function increment The continuity of the function at a point and on the interval. Break points, their classification. The derivative of the function, its geometrical and mechanical meanings. Rules of differentiation. Differential function, its geometric meaning. The use of the differential in approximate calculations. The main theorems of differential calculus (Fermat, Rolle, Lagrange) and their geometric illustration. Rule l'Hôpital The increase and decrease of the function on the interval. The extremum, the largest and smallest value of the function of one variable on the interval. Convexity, inflection points. Asymptotes. The general scheme of the study of the function of one variable.
Differential calculus, functions of several variables.	The function of several variables, the domain of definition. The limit of a function of two variables. The continuity of the function at a point and in the region. Partial derivatives; their geometric meaning. Differentiability of a function of several variables. Full differential and its geometric meaning. Partial derivatives of higher orders. Complex and implicit function of several variables. Tangent plane and normal to the surface (definition, equations). Extremum function of two variables. The derivative in the direction and gradient of a function of several variables (definitions, calculations, properties).
Indefinite integral and definite integral.	Antiderivative. The theorem on the difference of primitives, indefinite integral. Integration methods, use of integral tables. The problem of the area of a curvilinear trapezium, leading to the concept of a definite integral over a segment. A definite integral over a segment (definition, basic properties, calculation, Newton-Leibniz formula). Basic properties and calculation.
Ordinary differential equations.	Problems leading to differential equations. Definition of a differential equation, its order and solution. The Cauchy

	<p>problem and the Cauchy theorem for equations of the 1st order. General and private solutions. The main types of differential equations of the 1st order. Higher order differential equations. Differential equations of second order. Cauchy problem. General and private solutions. Second order differential equations that can be reduced in order. Linear differential equations of order n. Theorems on the structure of the general solution of linear homogeneous and linear inhomogeneous equations of order n. The fundamental system of solutions of a linear homogeneous differential equation. Methods for solving linear homogeneous and inhomogeneous differential equations with constant coefficients.</p>
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**Developers:**

Professor of the Department of Applied Mathematics

Klyushin V.L.

Head of the Department of Applied Mathematics

Skubachevsky A.L.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program**

**31.05.01 General medicine**

<b>Name of discipline</b>	<b>MEDICAL INFORMATICS</b>
<b>General labour intensity</b>	3 credit points (108 Hours)
<b>Course summary</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>GENERAL INFORMATION ABOUT COMPUTERS</b>	<p><b>COMPUTER ARCHITECTURE</b> 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). Memory: temporary, permanent, long-term. Types of software (system software, applications, programming systems), file archiver (Zip, Arj, Rar), virus protection programs. Architecture "thin client".</p> <p><b>OPERATING SYSTEMS.</b> 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.</p> <p><b>OPERATING SYSTEM SOLARIS</b> Familiarizing with the operating system Solaris. Solaris screen, windows, types of windows, working with windows: change the position and size of the window, scroll bars, switching between windows, closing window, taskbar. Desktop, shortcuts, File Manager Solaris. Parallel work of multiple applications. Working with files, catalogs, disks, searching files on the disk, communication between files of a certain type and application. Standard applications of the operating system Solaris: notepad, graphic and symbol editor, calculator.</p>
<b>THEORY OF PROBABILITY</b>	Basic concepts: experiment, random event. Types of random events: reliable and impossible events, elementary event, complex event, joint and incompatible events, opposite events. Space of elementary events. Operations on events: union, intersection, difference, symmetric difference. Venn diagrams. Combinatorics formulas : permutations, combinations, placement.

**Developers:**

Professor of the Department of Medical Informatics  
Associate Professor of the Department of Medical Informatics  
Senior Lecturer of the Department of Medical Informatics  
Head of the Department of Medical Informatics

Protsenko V.D.  
Lukyanova E.A.  
Lyapunova T.V.  
Stolyar E.L.

*Federal State Autonomic Educational Institution of Higher Education  
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*Faculty of Physical, Mathematical and Natural Sciences*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>General Chemistry</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Basic laws and concepts of chemistry.	Chemical element. Simple substance. Complex chemicals. Mole is the amount of a substance. Molar mass is equivalent. Gas laws. The law of equivalents.
Thermochemistry. Chemical kinetics. Chemical equilibrium	Basics of thermochemistry. Enthalpy. Hess law. Entropy. Gibbs free energy. The rate of chemical reaction, chemical equilibrium. The law of mass action. Chemical equilibrium.
Solutions. Theory of Electrolytic Dissociation.	General concepts of dispersed systems. Colloidal solutions. Ways of expressing the concentration of solutions: mass fraction, molar concentration, molar concentration of equivalents of the substance. Theory of Electrolytic Dissociation
Dissociation of weak and strong electrolytes. Hydrolysis of salts	Weak electrolytes. The law of dilution. The effect of a common ion. Buffer solutions. Strong electrolytes. Activity and activity ratio. Ionic strength. Ionic product of water. Hydrogen indicator. Hydrolysis of salts. Dependence of hydrolysis on temperature and concentration of solutions
Heterogeneous equilibria. Coordination compounds	Solubility constant. Solubility. Conditions of dissolution and sediment formation. Electrolytic dissociation and instability constant of coordination compounds
Redox Reactions	Redox Reactions. Redox potentials. Nernst equation. The condition of the course of redox reactions
The main classes of inorganic compounds	The main classes of inorganic compounds. The relationship between classes of inorganic compounds.
Basics of qualitative analysis	Basics of qualitative analysis of cations and anions. Determination of cations I - VI of the analytical groups and anions I - III of the analytical groups in solutions
Basics of quantitative analysis	Basics of quantitative analysis. Methods of neutralization, complexometric, oximetry and photolorimetry.

**Developers:**

Associate Professor of the Department of General Chemistry

Associate Professor of the Department of General Chemistry

Head of the Department of General Chemistry

Kolyadina NM

Polyanskaya N.A.

Davydov V.V.

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

*Faculty of Physical, Mathematical and Natural Sciences*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Bioorganic chemistry</b>
<b>Volume of discipline</b>	<b>1 point of credit (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction	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. Hybridizations of carbon atom.
Hydrocarbons	Alkanes. Nomenclature, isomerism, methods of preparation. Physical and chemical properties. Alkenes. Nomenclature, isomerism, methods of preparation. Physical and chemical properties. Alkynes. Nomenclature. Methods of preparation. Physical and chemical properties. Dienes. Nomenclature. Methods of preparation. Chemical properties.
Aromatic compounds	Aromatic compounds. The concept of aromaticity. Electrophilic substitution reactions for aromatic compounds. The rules of orientation.
Alkyl Halides	Alkyl Halides. Reactions of nucleophilic substitution of halogen in alkyl halides and arenes. Elimination reaction. Zaitsev's rule. Interaction with metals.
Alcohols. Phenols	Methods for preparation of alcohols. Atomicity of alcohols. The hydrogen bond. Reactivity of alcohols. Preparation of ethers and esters. Oxidation reaction. Phenol, methods of synthesis and chemical properties.
Amines. Aminophenols. Aminoalcohols.	Aliphatic and aromatic amines. The basicity of amines. Effect of substituents on the basic properties of amines. The salt formation. Acylation and alkylation. Reaction with nitrous acid. Aniline, methods of synthesis and chemical
Aldehydes and Ketons.	Methods for preparation of aldehydes and ketones. The reactions of the carbonyl group and $\alpha$ -position. Acetals and ketals. Reactions of oxocompounds with nitrogen-containing nucleophiles. Oxidation reaction. Aldol and crotonic condensation.
Carboxylic acid. Derivatives of carboxylic acids.	Methods of preparation. Reaction of the carboxyl group and $\alpha$ -position. Derivatives of carboxylic acid: salts, halides, anhydrides, amides, nitriles, esters. Preparation and

Dibasic carboxylic acids. Fats, oils, lipids. Hydroxy Acids. Oxo acid.	properties. Higher fatty acid. Dibasic carboxylic acids. Hydroxy Acids. Chemical properties. Optical isomerism.
Heterocyclic compounds.	Classification. Overview of natural derivatives of pyrrole, indole, pyridine, imidazole, purine. Pyrimidine and purine bases. Alkaloids and antibiotics. Nucleic acids. Nucleobases. Alkaloids. The classification structure. Theobromine, theophylline, caffeine. Nicotine, morphine, quinine, atropine. Action on the body.

**Developers:**

Associate Professor, Department of Organic Chemistry  
Associate Professor, Department of Organic Chemistry

Sorokina E. A.  
Listratova A.V.

The Head of Department of Organic Chemistry

Varlamov A. V.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Discipline</b>	<b>Biochemistry</b>
<b>Volume of the discipline</b>	<b>7 credits ( 252 hours )</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>Proteins: structure, properties, functions. Complex proteins, Nucleic acids, Enzymes.</b>	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. Physico-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 enzymes activity, Inhibitors of enzymes, Isoenzymes. Regulation of the enzyme activity, Diagnostic enzymology; enzymes as drugs.
<b>Molecular mechanisms of regulation. Lipids: structure, properties, functions. Biological membranes</b>	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 the main hormones. Hydrolyzable lipids. Non-hydrolyzable lipids. Biological roles. Fatty acids and fats. Structure of phospholipids and glycolipids. Isoprenoids. Sterols. Steroid hormones. Bile acids.
<b>Energy metabolism. Carbohydrate metabolism.</b>	Carbohydrate metabolism: pathways of absorbed monosaccharides. 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.
<b>Lipid metabolism.</b>	Lipid metabolism: pathways of the absorbed products lipid digestion, Mechanism of $\beta$ -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.
<b>Protein catabolism. Amino acid metabolism.</b>	Protein metabolism,' dynamic state of body proteins. Nitrogen balance. Problems of adequate, balanced nitrogen nutrition. Proteolysis. Absorption and active transport of amino acids. Pathway of amino acids metabolism in the body: reactions of deamination, decarboxylation, transamination and hydroxylation. Degradation of tissue proteins. Urea cycle.
<b>Metabolism of conjugated proteins. Biochemistry of organs and tissues.</b>	Metabolism of nucleoproteins and chromoproteins. Biosynthesis and decomposition of heme. Synthesis of purine and pyrimidine nucleotides. Metabolism of individual amino acids. Regulation of protein metabolism, Pathology of protein metabolism, Relationship of protein metabolism with metabolism of lipids and carbohydrates. Blood: composition and functions. Cellular elements. Blood plasma: composition. Plasma proteins. Carrier electrophoresis. Erythrocyte metabolism. Distribution of iron. Hydrogen ion concentration in the blood. Urine formation . Organic components and Inorganic components of the urine. Functions in the acid–base balance: Proton excretion and Ammonia excretion. Electrolyte and water recycling.

### Developers:

Associate Professor, Department of Biochemistry, Acad.Berezov T.T.  
Associate Professor, Department of Biochemistry, Acad.Berezov T.T  
Head of the Department of Biochemistry, them. Acad. Berezov T.T.

Lobaeva T.A.  
Ryskina E.A..  
Chernov N.N.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The discipline</b>	<i>Biology</i>
<b>The number of credits (hours)</b>	<b>6 credits (216 hours)</b>
<b>The content of the discipline</b>	
<b>Topics</b>	<b>Content of topics</b>
1. 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.
2. The genetic material	Structure and functions of nucleic acids. DNA replication. Mutations.
3. Gene expression. Organization of genomes	Transcription and translation. Control of gene expression in prokaryotic and eukaryotic cells. Organization of prokaryotic, eukaryotic and viral genomes.
3. 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.
5. The laws of heredity	The history of genetics. The laws of heredity.
6. Human genetics	Methods of human genetics. Hereditary diseases and their causes. Principles of diagnosis, treatment and prevention of hereditary diseases. Genetic counseling.
7. 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.
8. Medical Helminthology	Phylum Plathelminthes (Trematoda and Cestoda), phylum Nematelminthes (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.

9. 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.
10. Biological evolution	Biological evolution. Theories of evolution.
11. The Humans and the Biosphere	Ecosystems. Medical aspects of environmental control.

**Developers:**

Associate Professor, Department of Biology and General Genetics  
Head of the Department of Biology and General Genetics

Gigani O. B.  
Schipkov V.P.

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The discipline</b>	<b>Anatomy</b>
<b>The number of credits (hours)</b>	<b>10 credits (360 hours)</b>
<b>The content of the discipline</b>	
<b>Topics</b>	<b>The content</b>
Human Anatomy	<p>Introduction into Human anatomy. Main anatomical definitions. Skeletal system: bone as an organ; classification, functions, development and structure of bones, structure of skull, vertebrae, sacrum, coccyx, ribs, thorax, upper and lower limb bones. Articulations system: classification: structure, development and classification of joints; bone articulations of the skull, vertebral column, chest, shoulder and pelvic girdle articulations, free upper and lower extremities. Muscular system: muscle as an organ; classification of muscles, topography and accessory apparatus, muscles of the head and neck, back muscles, chest and abdominal muscles, the diaphragm; muscles of the upper and lower limbs. Structure, development and functions of digestive, respiratory, urinary, male and female reproductive systems, endocrine glands. Cardiovascular system: structure of the heart, vessels of the systemic and pulmonary circulation. Lymph outflow pathways. Lymphoid system. Endocrine glands: structure and functions. Nervous system: central part – brain and spinal cord; peripheral part – spinal nerves, brachial and lumbosacral plexus. Innervation of the locomotor apparatus and integumentary system</p> <p>Autonomous nervous system: innervation of the internal organs. Sense organs anatomy: vision, hearing and balance, taste, smell.</p>

**Developers:**

Head of department of Human anatomy professor  
Associate professor of Human anatomy  
Associate professor of Human anatomy

N.I.Volosok  
T.Y.Tsvetkova  
V.I.Kozlov

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Topographic Anatomy &amp; Operative Surgery</b>
<b>The amount of discipline</b>	<b>6 CU (216 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Topographic anatomy and operative surgery of the extremities	<p>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.</p> <p>Surgical instruments. Basic operational techniques: separation of tissues, stop bleeding, put on and removal of skin nodes sutures, tying surgical knots.</p> <p>Primary surgical treatment of wounds of the body and limbs. Stop bleeding and restore blood flow. Vascular suture. Tendon suture. Nerve suture.</p>
Topographic anatomy and operative surgery of the head, neck, thorax	<p>Topographic anatomy and operative surgery of the head. Cranial vault. Meninges and intermembranous space. Face. Superficial and deep lateral face regions.</p> <p>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.</p>
Topographic anatomy and operative surgery of the abdomen, pelvis, perineum.	<p>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.</p>

	<p>Surgical anatomy of organs of the lower floor of the abdominal cavity: the small intestine, large intestine. The back wall of the abdomen.</p> <p>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.</p> <p>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.</p> <p>Endoscopic surgery on the abdominal organs.</p> <p>Cholecystectomy. Appendectomy. Herniorrhaphy.</p> <p>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.</p> <p>Operations on the pelvic organs.</p>
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**Developers:**

Professor of the Department of Topographic Anatomy  
and operative surgery  
Head of the Department of Topographic Anatomy  
and operative surgery

Smirnova E.D.

Protasov A.V.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Histology, Embryology, Cytology</b>
<b>The amount of discipline</b>	<b>6 CU (216 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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. <i>Epithelia</i> . Differon: its structure and characteristic. Glands. Types of secretion. The system of the internal environment tissue. <i>Blood and lymph</i> . The hemogram and the differential leukocytes count. Age and sex features of blood. Physiological regeneration of blood and lymph. <i>Hemopoiesis</i> . <i>Immunity</i> . Immunocompetent cells. <i>Connective tissue</i> . Connective tissue proper. Skeletal tissues: cartilage, bone. Muscle tissues: smooth, and cross-striated (skeletal, cardiac). Muscle as organ. <i>Nerve tissue</i> . 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. <i>The Nerve System</i> . Organs of the peripheral and central nerve system. <i>Sensory System</i> (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. <i>The Circulatory System</i> . Blood vessels: structure, classification. Arteries. Veins. The vessels of microvasculature. Lymphatic vessels. The heart.

	<p><i>The system of organs of hemopoiesis and immune defense.</i> The central and peripheral organs of hemopoiesis and immunogenesis. Red bone marrow, thymus, lymph nodes, spleen. Inflammation, healing, recovery. Immune responses.</p> <p><i>The Digestive System.</i> 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.</p> <p><i>The Respiratory System.</i> The conductive portion and the respiratory portion. Nasal cavity, nasopharynx, larynx, trachea, the bronchial tree, the lung. Air-blood barrier.</p> <p><i>The Integumentary System.</i> The skin. The skin' types. The skin' derivatives. Sebaceous and sweat glands. Hairs. Nails.</p> <p><i>The Endocrine System.</i> 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.</p> <p><i>The Urinary System.</i> Kidneys. Nephron as functional-structural unit of the kidney. Filtration barrier. Endocrine apparatus of the kidney. The urinary tract. The urinary bladder.</p> <p><i>The Reproductive Systems.</i> 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.</p>
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**Developers:**

Associate Professor of the Department of Histology, Cytology, Embryology

Savrova OB

Head of the Department of Histology, Cytology, Embryology

Eremina I.Z.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Normal Physiology</b>
<b>The amount of discipline</b>	<b>7 CU (252 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>Physiology of excitable tissues.</b>	Excitability and its parameters. The structure and function of the membrane of excitable cells. Ion pumps and their functions (potassium-sodium, calcium, chlorine, proton pump). Ion channels, classification, structure and functions. Selective and non-selective channels. Potential-dependent and ligand-dependent ion channels. Membrane potential and action potential (its phases). Factors determining the speed of the pulse. Classification of nerve fibers by Erlanger and Gasser. Synapse physiology. The role of electrical and chemical synapses. Physiology of muscles. Types and modes of muscle contraction. The mechanism of muscle contraction in accordance with the theory of sliding threads. Energy supply of muscle contraction.
<b>Blood physiology</b>	Blood cells. Leukocytes. The function of red blood cells and hemoglobin. Blood groups. Rh factor. Blood coagulation. The constancy of the internal environment (homeostasis). Blood constants
<b>Physiology of the heart and blood vessels</b>	Cardiac cycle. Distribution of excitement in the heart. Conductive system of the heart. Properties of the heart muscle. Nervous and humoral regulation of the heart. Methods for the study of the heart. Physiology of blood vessels. Basic laws of hemodynamics. Microcirculation and lymph flow. Methods for the study of blood flow.
<b>The physiology of respiration.</b>	External Respiration. Lung volumes and capacities. Gas transfer by blood. Regulation of breathing. Breathing in altered environmental conditions.
<b>Metabolism and energy. Thermoregulation.</b>	BMR and TMR concept. The exchange of proteins, fats, carbohydrates, vitamins and trace elements. Body temperature and thermoregulation.
<b>The physiology of digestion.</b>	Functions of the digestive tract. Motor functions of the digestive tract. Methods for studying digestive functions. Secretory function and digestion in various parts of the digestive tract. Nutrient absorption in the gastrointestinal tract. The role of the liver in digestion.
<b>Physiology of excretion</b>	The system of organs of excretion. Urine formation in the kidneys. Kidney as an organ of homeostasis. Non-

	educational functions of the kidneys. Urinary Bladder and urination. Methods for studying kidney function.
<b>The central nervous system and the autonomic nervous system.</b>	Reflex and its characteristic. The main properties of the nerve centers. Methods of study of the central nervous system functions. Sectional physiology of the central nervous system. VNS. Sympathetic, parasympathetic, methasympathetic nervous system.
<b>Endocrine glands.</b>	Hormones, mechanisms of action. Private physiology of endocrine glands.
<b>Integrative physiology.</b>	GNI Conditioned reflex. Dynamic stereotype. Types of inhibition in the cerebral cortex. Sleep. Types of GNI. Memory mechanisms. The doctrine of the functional system (PK Anokhin).
<b>Physiology of sensory systems.</b>	Visual, taste and olfactory sensory systems. Physiology of hearing and vestibular apparatus. Skin sensory system.

**Developers:**

Associate Professor of the Department of Normal Physiology  
Head of the Department of Normal Physiology

Starshinov Yu.P.  
Torshin V.I.

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Microbiology, Virology</b>
<b>The amount of discipline</b>	<b>7 CU (252 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>General Microbiology</b>	The subject and goals 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.
<b>General Virology</b>	The structure of viruses, the interaction of viruses with cells, reproduction of viruses. Bacteriophages.
<b>The doctrine of infection</b>	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.
<b>Special Microbiology</b>	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. Medical virology.

**Developers:**

Professor of the Department of Microbiology and Virology  
Head of the Department of Microbiology and Virology

Volina E.G.  
Mikhailov M.I.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>IMMUNOLOGY</b>
<b>The amount of discipline</b>	<b>3 Credits (108 hours)</b>
<b>The course contents</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to immunology	The concept of immunity. The subject and tasks of immunology. The history of the development of immunology. Types of immunity. Central and peripheral organs of the immune system and their functional organization. Age features of the immune system development. Immune system in ontogenesis and phylogenesis. Immunopoiesis in intrauterine fetus. Embryospecific antigens..
Antigens and allergens	The concept of antigenicity and allergenicity. Structure of antigens. Types of antigenic molecules: complete and incomplete antigens (haptens). Properties of antigens of different chemical nature. Specificity of antigens and its types. Ways of penetration and elimination of antigens. Processing and antigen presentation. Basics of immunogenetics. HLA system. Patterns and Toll-like receptors
Physiology of stem cells. Types of immunity: congenital and acquired	Types of immunity: congenital and acquired. Stem cells, role in the immune response, mechanisms of proliferation and differentiation. Mechanisms and factors of innate immunity. Primary recognition of antigens. Mechanisms of immunological tolerance and its types. Immune self tolerance.
Phagocytosis Complement system	Phagocytosis. The history of the phagocytosis discovery. Phagocytic/ antigen-presenting cells (APC). Mechanisms of phagocytosis and the role of phagocytic reactions in immunity and intercellular cooperation. Complement properties, role in immune response and mechanisms of complement system activation. Antimicrobial peptides.
Antibodies and humoral immune response	B - cell link of immunity, maturation and differentiation of B-lymphocytes. B-cell receptors and markers. Humoral immune response. Immunoglobulins. Structure and function of immunoglobulins of different classes. Mechanisms of switching the synthesis of immunoglobulins of different classes. The concept of affinity and avidity of antibodies. Antigen-antibody reaction. Principles of immuno - serological diagnosis. Methods for determination of antigen-

	antibody complexes.
Humoral factors of immune and allergic reactions	Humoral factors of immune and allergic reactions. Classification and properties of cytokines. Cytokine's producing cells. A variety of receptors and mechanisms for the reception of cytokines. Interferon system. Structure, classification and role in immune reactions. The importance of interferons in anti-infectious and anti-tumor immunity. The complement system. Properties of complement, role in the immune response, mechanisms of activation of the complement system.
Adhesion molecules, homing and cell migration	Chemokines and their role in the inflammatory response. Growth factors, properties and role in the development of immune reactions and immunopathology. Diversity of receptors and mechanisms of chemokines and growth factors reception.
Anti-infectious immunity	Mechanisms of immune inflammation development in infectious and parasitic diseases. Immunosuppressive properties of infectious agents. Effective anti-infectious mechanisms.
Anti-tumor immunity	Tumor-specific antigens. Immune response to tumor antigens. Immunological surveillance and tumor growth. Immunological diagnosis of tumor growth. Immunological markers of tumors of various origin and localizations. Prognostic and diagnostic markers of tumor. Nonspecific and specific immunotherapy of tumors. Nobel prize in physiology or medicine 2018 - for developments in cancer therapy by activating the immune response. Blockade of immune checkpoints in cancer.
Immunology of reproduction	Immunity during pregnancy. Humoral and cellular mechanisms to maintain the immunity of embryonic alloantigens. The role of the HLA system in the mother-fetus relationship. Immunological infertility and principles of immunodiagnostics.
Introduction to clinical immunology	Clinical immunology: definition, objects of study, the Concept of the immune status of the body, principles, levels, methods of evaluation. Age features of immune system.
Diseases of the immune system	Classification of allergic/immunopathological reactions by Gell and Coombs. Features of the mechanisms of development of various types of allergic reactions. Immunopathological processes with different mechanisms. Allergic reactions. Mechanisms of development. The role of various helper subpopulations of T-lymphocytes in the regulation of allergic reactions. Properties and role of IgE hyperproduction in allergic reactions. The main IgE-regulatory cytokines (IL4, IL5, IL13, IL17). Mast cells and the role of their various mediators in the development of allergic reactions. Therapy of allergic diseases. Allergen specific immunotherapy (ASIT). Molecular Allergology.

	<p>Molecular approaches to improving specific immunotherapy.</p> <p>Immunopathological processes. Classification and mechanisms of development of primary immunodeficiencies. Diagnosis of primary immunodeficiencies.</p> <p>Secondary immunodeficiencies, the role of infections and non-infectious factors in their development. Principles of immunological diagnosis of secondary immunodeficiencies. The concept of immune status.</p> <p>Autoimmune disease. Classification. The concept of autoimmunity. Autoimmune reactions, causes, mechanisms of implementation, clinical manifestations, General principles and prospects of treatment.</p>
<p>Fundamentals of immunorehabilitation. Immunomodulating drugs</p>	<p>The concept of immunotherapy. Immunomodulators. Classification of immunomodulators and basic principles of their application. Indications and contraindications. Immunorehabilitation: historical aspects. Strategy and tactics of immunorehabilitation of patients with impaired immune system function.</p>
<p>Vaccines: vaccine prophylaxis and vaccine therapy</p>	<p>History and success of vaccination from Jenner to the present day. Type of vaccine. Rules of vaccination, contraindications, postvaccinal complications. Urgent measures. Antitumor vaccine. Features of vaccination of patients with primary and secondary immunodeficiency. Features of vaccination of immunocompromised patients. Recombinant vaccines and genetic engineering of recombinant allergen derivatives.</p>
<p>Immunobiotechnology. Cellular and hybrid technologies</p>	<p>Modern directions and achievements of immunobiotechnology. Hybridoma technologies. Monoclonal antibodies. Genetically engineered cytokines, anti-cytokines and anti-receptor antibodies. Principles of molecular allergology. Molecular approaches to the production of recombinant allergens, genetic engineering of recombinant allergen derivatives</p>

**Developers:**

Professor of the Department of Microbiology and Virology  
Head of the Department of Microbiology and Virology

Volina E.G.  
Mikhailov M.I.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Pharmacology</b>
<b>The amount of discipline</b>	<b>7 CU (252 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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. Adrenomimetics and simpatomimetics. Adrenolitics and simpatolitics. Pharmacokinetics and pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions.
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.
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.
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.
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.
Antibacterial, antiviral and antifungal medicines.	Antibiotics. Synthetic antimicrobial agents. Antiviral, antifungal medicines, anti-TB drugs. Antiprotozoal, antisyphilitic. Pharmacokinetics and

	pharmacodynamics of groups of drugs. Indications, contraindications, drug interactions.
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**Developers:**

Associate Professor of the Department of General  
and Clinical Pharmacology  
Head of the Department of General and Clinical Pharmacology

Gushchina Yu.Sh.  
Lepakhin V.K.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program**

**31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Pathological Anatomy, Clinical Pathological Anatomy</b>
<b>The amount of discipline</b>	<b>8 CU (288 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Cells' damage.	Necrosis. Apoptosis. Intracellular accumulation: hyaline changes. Amyloidosis. Pathologic calcification (calcifications). Metabolic pigments (chromoproteids). Pigmentation disorders.
Adaptive changes in the organism.	Disruption of water and electrolyte balance. Circulatory disorders: Shock Hemostasis. Thrombosis. Ischemia. Infarction. Acute inflammation. Chronic inflammation. Regeneration and wound healing. Pathological anatomy of the immune system. Pathological conditions of the immune system. Hypersensitivity reactions. Transplant rejection. Autoimmunity and autoimmune disease. Immune Deficiency Syndromes. Pathological anatomy of compensatory and adaptive processes. Pathology of cell growth and differentiation. Adaptation processes.
Pathological anatomy of tumors.	Tumors of different tissues and organs. Leukemias. Lymphomas. Anemias.
Morphological changes in somatic pathology.	Atherosclerosis and arteriosclerosis. Hypertension and arteriolosclerosis. Cerebrovascular disease. Cerebral infarction. Coronary heart disease. Hypertensive heart disease: Diseases of the heart valves and holes and main arteries. Heart defects. Glomerular kidney disease. Acute glomerulonephritis. Nephrotic syndrome. Chronic glomerulonephritis. Renal amyloidosis. Hepatitis, alcoholic liver disease. Cirrhosis of the liver. Diseases of the stomach. Peptic ulcer disease. Diseases of the appendix cecum.
Morphological changes in infectious diseases.	General characteristics of infectious diseases. Typhoid and typhus fever. Diphtheria. Scarlet fever. Bacillary dysentery. Acute and chronic bronchitis, bronchiolitis. Bronchiectasis. Bronchopneumonia. Lobar pneumonia. Flu. Measles. Classification and general characteristics of fungal infections. Syphilis. Malaria. Amebiasis. Trypanosomiasis. Leishmaniasis. Schistosomiasis. Echinococcosis. Plague. Smallpox. Cholera. Anthrax. Sepsis.

**Developers:**

Associate Professor of the Department of Pathological Anatomy  
Head of the Department of Pathological Anatomy

Ivina A.A.  
Babichenko I.I.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Pathophysiology, Clinical Pathophysiology</b>
<b>The amount of discipline</b>	<b>8 CU (288 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General nosology. Ecologic pathophysiology	Conception about health and disease; definition of patho- and sanogenesis. Civilization diseases; chronopathology.
Cell pathophysiology	Pathology of biomembranes and organelles of the cell; types and mechanisms of cellular death; violations of biorhythms of the cell.
Standard pathological processes	Disorders of local blood circulation; inflammation; immunity, immunopathology; allergy. Pathophysiology of tumor growth. Hypoxia.
Standard metabolic disorders	Carbohydrate, fatty, proteinaceous, purine, pathology of a thermal exchange of an organism; pathology of a water-salt exchange, hypostases; acid and main condition of an organism.
Extreme states	Pain, stress; shock; collapse; coma; clinical and biological death.
Blood pathophysiology	Diseases of red blood; diseases of white blood; hemorrhagic diathesis.
Pathophysiology of cardiovascular system	Arrhythmias; coronary heart disease; complications of a myocardial infarction; heart diseases; cardiomyopathy; myocarditis; endocarditis; pericarditis; heart failure. Pathophysiology of a vascular wall.
Pathophysiology of respiratory system	Respiratory failure; asphyxia; emphysema of lungs; pulmonary edema; bronchial asthma; pneumothorax.
Pathophysiology of a gastrointestinal tract	Stomach ulcer of a stomach and duodenum; pathophysiology of a liver and bile ducts; pancreas pathophysiology; intestinal impassability.
Pathophysiology of secretory system	Nephrotic syndrome; the acute and chronic diffusion glomerulonephritis; pyelonephritis; renal lithiasis; chronic renal failure; uremia; renal coma.
Pathophysiology of endocrine system	Pathophysiology of hypothalamic- pituitary-adrenal systems, thyroid and parathyroid glands, parathyroid glands, a thymus, an epiphyses, sexual glands.

Pathophysiology of nervous system and higher nervous activity	Pathophysiology of functional neurosis; pathological reflexes; pathophysiology of sleep disorders; pathophysiology of violations of memory.
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**Developers:**

Professor, Department of General Pathology  
and pathological physiology named after VA. Frolova

Demurov E.A.

Associate Professor of the Department of General Pathology  
and pathological physiology named after VA. Frolova

Velichko E.V.

Head of the Department of General Pathology  
and pathological physiology named after VA. Frolova

Blagonravov M.L.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Hygiene</b>
<b>The amount of discipline</b>	<b>7 CU (252 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Theoretical and methodological foundations of the discipline "total hygiene". Public health and the environment.	General hygiene as a science and a subject teaching; sanitation; organization forms and stages of state sanitary and epidemiological supervision. Public health and the environment, as a combination of natural, anthropogenic and social factors. Features of action on the body of harmful environmental factors. Hygienic regulation and forecasting.
Hygiene air environment. Solar radiation.	Climate and human health. Hygienic aspects of acclimatization. The chemical composition of atmospheric air and its hygienic importance. Solar radiation and its hygienic value.
Hygienic problems of residential areas. Hygiene of residential and public buildings.	Hygienic assessment of planning residential areas. Health homes. Hygienic assessment of indoor climate. Hygienic evaluation of the chemical composition of indoor air. Hygienic assessment of microbial contamination of indoor air. Hygienic assessment of the premises lighting.
Radiation hygiene	Radioactivity. Sources of radiation. Natural background radiation. Methods radiometry objects of the environment. The dose of ionizing radiation. dosimetry methods. Definition and hygienic assessment of the radiation dose. Protecting the public from ionizing radiation.
Nutrition and health.	Hygienic bases of nutrition. Features nutrition of different population groups. Hygienic bases of the organization of clinical nutrition. Dietary and preventive nutrition. Sanitary-hygienic examination of foods. Food and biological value of animal products. Sanitary-hygienic evaluation of milk and milk products. Food and biological value and signs of damage to products of plant origin. Sanitary-hygienic examination of bread. The methods of food preservation. Sanitary-hygienic examination of canned and concentrates. Food safety. Food poisoning and its prevention. Sanitary-hygienic examination of projects catering.
Health and water supply. Soil Hygiene, cleaning of residential areas. Sanitary protection of water bodies.	Water as an environmental factor, its hygienic and epidemiological significance. Hygienic assessment of water sources. Rationing qualitative composition of drinking water. Methods for cleaning, disinfection, and methods to improve the quality of drinking water. Disinfection of drinking water at the centralized water supply and in the

	field. Soil as environmental factors. the soil's role in the transmission of endemic, infectious and parasitic diseases. Contamination of soil and self-cleaning. Hygienic assessment of soil quality. Hygienic bases and requirements for cleaning of populated areas. Sewer populated areas and sanitary protection of water bodies.
Occupational health and protection of workers' health	Fundamentals of occupational health and workers' health. Physiological basis of the labor process. Hygienic assessment and prevention of physical environment factors. Hygienic assessment and prevention of the impact of industrial aerosols. Hygienic assessment and prevention of the influence of chemical and biological factors of the production environment. Occupational health in agriculture. Occupational Health in the health system
Features of the planning and operation of pre- school and school institutions. Health of children and adolescents. Healthy lifestyle.	Hygienic assessment of the health and physical development of children and adolescents. Hygienic requirements for planning, equipment, maintenance and operation of child care centers. A healthy lifestyle and personal hygiene.
Health medical institutions	Hospital hygiene. Features of structural and planning solutions for health care facilities. Prevention of nosocomial infections.

**Developers:**

Associate Professor of Public Health,  
Health and Hygiene  
Associate Professor of Public Health,

N.A. Drozhzhina

health and hygiene

Maksimenko LV

Associate Professor of Public Health,  
Health and Hygiene

Piven E.A.

Head of the Department of Public Health,  
Health and Hygiene

Fomina A.V.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Name of discipline</b>	<b><i>Public Health and Health Care, Economics of Health Care</i></b>
<b>General labour intensity</b>	<b>6 credits (216 hours)</b>
<b>Course summary</b>	
<b>Topics</b>	<b>Content of topics</b>
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.

**Developers:**

Professor of the Department of Public health

D.I.Kicha

Head of the Department of Public health, Healthcare and Hygiene, Professor

A.V Fomina

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Epidemiology</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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, semisynanthropic and synanthropic mammals (rodents, insectivores, ungulates, predators), birds in the formation of natural and anthropogenic nidi. The main principles of epizootological-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 significant infections.	The content of this section is defined by the actual epidemic situation and calendar plan of study course of infectious 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.
Epidemiology and prevention of a group of intestinal, drip, blood infections.	The issues of private epidemiology of the most common infections of each group are considered.

**Developers:**

Associate Professor, Department of Infectious Diseases  
with courses of epidemiology and phthisiology

Golub V.P.

Head of the Department of Infectious Diseases  
with courses of epidemiology and phthisiology

Kozhevnikova G.M.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Medical Rehabilitation</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Organizational and methodological bases of rehabilitation	Definition of rehabilitation. The concepts of impairment, disability, social insufficiency. Types of rehabilitation, their goals and objectives. Medical rehabilitation. Abilitation. 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	Concepts disabled, disability. The concept of "disability". Primary, secondary, tertiary physical defects. Classification of disability. Disability groups. Features (risk groups) of persons with disabilities.
Means and methods of medical rehabilitation	Means of medical rehabilitation. Drug provision of the rehabilitation process. Means of psychological rehabilitation. Technical means of rehabilitation. Reconstructive surgery. Physiotherapy. The concept of physiotherapy. External physical factors used in physiotherapy. Natural and preformed healing factors. The mechanism of therapeutic action of physiotherapy. General contraindications. Safety precautions when working in a physiotherapy department (office). Classification, types and forms of exercise therapy. Classification of motor modes. Features and evaluation of functional examination of patients before and after exercise therapy in different motor regimens. Ergotherapy Basics of medical massage. Basic tricks. Indications and contraindications. Basics of reflexology. The mechanism of therapeutic action. Methods of reflexology. Acupressure technique. Indications and contraindications. Features of reflexology in the elderly, senile age and long-livers. The mechanism of therapeutic action and methods of hirudotherapy. Indications, contraindications. Technique of hirudotherapy. Possible complications. The mechanism of therapeutic action of phytotherapy. Features of the method of herbal medicine. Indications, contraindications. The mechanism of therapeutic action of apitherapy. Indications, contraindications. The mechanism of therapeutic action of

	<p>aromatherapy. Aromatherapy techniques. Indications, contraindications. Climatotherapy. Climatotherapy factors. Climates. Climatic resorts. Aerotherapy. The mechanism of therapeutic action of aerotherapy. Techniques. Heliotherapy. The mechanism of therapeutic action of heliotherapy. Forms of conducting sessions of heliotherapy. Indications, contraindications. Thalassotherapy. The mechanism of therapeutic action of thalassotherapy. The concept of "cold load". Indications, contraindications for thalassotherapy. Speleotherapy. Microclimatic features of natural caves, salt mines. The mechanism of therapeutic action speleotherapy. Indications, contraindications. Pelotherapy. Peloid classification. The mechanism of therapeutic action pelotherapy. Techniques. Indications, contraindications. Balneotherapy. Composition and classification of mineral waters. The mechanism of action of balneotherapy. Types of balneotherapy. Indications and contraindications. Rules of reception of mineral waters.</p>
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**Developers:**

Associate Professor of Medical Rehabilitation

Zubarkin M.M.

Head of the course of medical rehabilitation

Zhernov V.A.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Name of discipline</b>	<b>Clinical pharmacology</b>
<b>Complexity (labor input) of discipline</b>	<b>3 credit units (108 hours)</b>
<b>Summary of discipline</b>	
<b>Topics</b>	<b>Content of topics</b>
<p><b>1. General issues of clinical pharmacology.</b></p> <p><b>2. Specific issues of clinical pharmacology.</b></p>	<p>1.1. Introduction to clinical pharmacology. Fundamentals of pharmacoepidemiology and pharmacoconomics. Clinical research. Principles of clinical evidence-based medicine.</p> <p>1.2. Fundamentals of clinical pharmacodynamics.</p> <p>1.3. Fundamentals of clinical pharmacokinetics.</p> <p>1.4. Drug interactions.</p> <p>1.5. Adverse drug reactions.</p> <p>1.6. Principles of efficacy and safety assessment of drugs. Fundamentals of rational pharmacotherapy (P-drug and P-treatment).</p> <p>2.1. Clinical pharmacology of drugs affecting main functions of myocardium.</p> <p>2.2. Clinical pharmacology of drugs affecting vessels.</p> <p>2.3. Clinical pharmacology of lipid-lowering drugs and metabolism modifiers.</p> <p>2.4. Clinical pharmacology of drugs affecting hemostasis and hemopoiesis.</p> <p>2.5. Clinical pharmacology of drugs affecting lung functions.</p> <p>2.6. Clinical pharmacology of drugs affecting GIT.</p> <p>2.7. Clinical pharmacology of drugs applied in treatment of kidney disorders.</p> <p>2.8. Clinical pharmacology of drugs applied in endocrinology.</p> <p>2.9. Clinical pharmacology of anti-inflammatory drugs.</p> <p>2.10. Clinical pharmacology of drugs applied in treatment of immune system disorders and allergic conditions.</p> <p>2.11. Clinical pharmacology of anti-infectious drugs.</p> <p>2.12. Clinical pharmacology of psychoactive drugs.</p>

**Developers:**

Professor of the department of pharmacology and clinical pharmacology

S.B. Fitilev

Head of the department of pharmacology and clinical pharmacology

V.K. Lepahin

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Dermatovenerology</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General dermatology:	Anatomy, physiology, histology of the skin. Histopathological changes. Elements of the rash. Etiology and pathogenesis of skin diseases. Methods of diagnosis of skin and venereal diseases. Principles of general and local therapy, prevention in dermatovenerology.
Infectious and parasitic diseases.	Pyoderma. Scabies. Lice Fungal diseases of the skin.
Allergic and other pruritic dermatosis.	Dermatitis, toxicoderma, eczema, pruritus, atopic dermatitis, pruritus, urticaria, angioedema.
Dermatosis with unknown etiology.	Psoriasis, lichen planus.
Collagenoses.	Lupus erythematosus, scleroderma. Dermatomyositis.
Cystic dermatosis. Erythema.	Vulgar pemphigus. Herpetiform dermatosis Dühring. Exudative erythema multiforme.
Viral dermatosis.	Herpes, shingles, molluscum contagiosum, warts.
Syphilis. Sexually transmitted infections.	Gonorrhea, trichomoniasis, chlamydia.

**Developers:**

Assistant of the Department of Skin and Venereal Diseases

Savastenko A.L.

Head of the Department of Skin and Venereal Diseases

Tishchenko A.L.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Neurology, Medical Genetics, Neurosurgery</b>
<b>The amount of discipline</b>	<b>6 CU (216 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Topical diagnosis and semiotics of diseases of the nervous system.	<ol style="list-style-type: none"> <li>1. The study of motor functions.</li> <li>2. Investigation of the functions of the motor cranial nerves: III, IV, V, VI, VII, IX, X, XI, XII. Lesion syndromes.</li> <li>3. Investigation of surface and deep sensitivity.</li> <li>4. Research methods and symptoms of damage to the sense organs - sight, hearing, smell, taste.</li> <li>5. Symptomatology and methods of research of aphasia, apraxia, agnosia.</li> <li>6. Symptomatology and methods of research coordination of movements. Research methods and symptoms of extrapyramidal system lesions</li> <li>7. The study of the autonomic nervous system.</li> <li>8. The main syndromes of the brain and spinal cord.</li> <li>9. Somatoneurological and neurosomatic syndromes.</li> <li>10. Paraclinical research methods.</li> </ol>
Vascular diseases of the brain and spinal cord.	Acute disorders of cerebral circulation. Chronic and transient disorders of cerebral circulation. Vascular diseases of the spinal cord. Treatment of vascular diseases of the central nervous system. Principles of rehabilitation.
Infectious and parasitic diseases of the nervous system.	Bacterial meningitis (meningococcal, pneumococcal, recurrent bacterial, etc.). Serous meningitis, tuberculous meningitis, Brain abscess. Thrombosis of the cerebral sinuses. Encephalitis (tick-borne, mosquito, epidemic, herpetic, influenza, rheumatic). Echinococcosis, neurocystecyrcosis, schistosomiasis, trypanosomiasis, toxoplasmosis, malaria. Neurospid. Neurosyphilis.
Peripheral nervous system diseases.	Polyneuropathy: toxic (alcoholic), dysmetabolic (diabetic), hereditary (neural amyotrophy of Charcot-Marie-Tus). Neuralgia of the trigeminal nerve. Neuropathy of the facial nerve. Peripheral nerve tunnel neuropathy.
Chronic and chronically progressive diseases.	Amyotrophic lateral sclerosis. Myasthenia. Syringomyelia
Hereditary degenerative diseases of the nervous system.	Progressive muscular dystrophies. Myotonia and myotonic syndromes. Paroxysmal myoplegia. Down syndrome, Klinefelter, Shereshevsky-Turner

Demyelinating diseases of the nervous system.	Multiple sclerosis. Scattered encephalomyelitis. Opticomyelitis OVDP, HVDP.
Vegetative endocrine diseases. Neurosis.	Migraine, tension headache. Cluster headache.
Epilepsy and convulsive syndromes. Fainting	Epilepsy, classification, clinical presentation, diagnosis, treatment. Paroxysmal conditions.
Neurosurgery	Methods of examination in neurosurgery. Tumors of the central nervous system. Vascular diseases of the brain in neurosurgery. Traumatic brain injury.

**Developers:**

Associate Professor of the Department  
of Nervous Diseases and Neurosurgery

Nozdryukhina N.V.

Head of the Department of Nervous Diseases and Neurosurgery

Chmutin G.E.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program**

**31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Psychiatry, Medical Psychology</b>
<b>The amount of discipline</b>	<b>5 CU (180 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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 paranoid 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

	<p>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.</p>
Treatment of mental disorders	<p>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.</p>
Medical psychology	<p>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"</p>

**Developers:**

Associate professors of the Department of Psychiatry and Medical Psychology

M.S. Artemyeva

Associate professors of the Department of Psychiatry and Medical Psychology

I.E.Danilin

Head of the Department of Psychiatry and Medical Psychology

I.V. Belokrylov

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Otorhinolaryngology</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Investigation methods of ENT organs: anterior rhinoscopy, posterior rhinoscopy, pharyngoscope, otoscopy.	Development of methods of ENT – organs: anterior rhinoscopy, posterior rhinoscopy, pharyngoscope, laryngoscope, otoscopy.
Pathology of the nose and paranasal sinuses.	Diseases of external nose. Acute and chronic diseases of the nasal cavity. Injuries of the nose and paranasal sinuses. Nosebleeds. Foreign body in the nasal cavity and paranasal sinuses. Endonasaal endoscopic surgery. Inflammatory diseases of the paranasal sinuses. Orbital and intracranial complications of diseases of the nose and paranasal sinuses.
Pathology of the pharynx.	Angina, complications of angina. Chronic tonsillitis. Trauma and foreign body in the pharynx. Adenoids. Acute and chronic pharyngitis.
Pathology of the ear.	Diseases of the external ear. Acute middle ear infections. Mastoiditis. Physiology and research methods of the vestibular analyzer. Chronic diseases of the middle ear. Intracranial complications. 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 ENT organs.	Specific diseases of upper respiratory tract.

**Developers:**

Associate professors of the Department of otorhinolaryngology

I.A.Korshunova.

Head of the Department of otorhinolaryngology

V.I.Popadyuk

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Ophthalmology</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to Ophthalmology	History of ophthalmology. The main tasks of general practitioners, the problem of eye morbidity and blindness. Evolution of the organs of vision and development of the human eye.
Anatomy of the organ of vision	Three divisions of the visual analyzer. Anatomy of the orbit. Protective apparatus of the eye. Conjunctiva. Tear-producing and teardrop apparatus of the eye. Shells of the eyeball. Vitreous body.
Visual acuity, refraction, accommodation.	Optical device of the organ of vision. Visual acuity. Physical and clinical refraction. Accommodation and convergence.
Clinic of refractions. Astigmatism. Presbyopia. Correction.	Refractive anomalies. Correction. Astigmatism, its types, principles of correction. Presbyopia, the principles of correction. Features of contact lens correction.
Methods of examining the anterior part of the eye (external examination, side lighting, biomicroscopy, gonioscopy). Research in transmitted light. Theory of ophthalmoscopy.	Investigation of the eye and its appendages in side lighting and in transmitted light. Fundamentals of biomicroscopy. Gonioscopy. Basics of ophthalmoscopy. The method of skiascopy. Methods of ophthalmoscopy.
Methods of examination of the eyes Function	Central and peripheral vision. Changing the visual fields. Defects of the field of view. Blind spot. Color perception. Disorders of color perception. Study. Light Sensation. Adaptation.
The motor apparatus of the eye. Binocular vision. Strabismus	Binocular vision. Violation of binocular vision. Strabismus, species. Causes. Amblyopia. Classification. Types of treatment of strabismus.
Diseases of the eyelids, lacrimal organs, the orbit.	Diseases of the eyelids. Congenital anomalies of the eyelids. Diseases of lacrimal organs. Differential diagnostics. Methods of treatment. Diseases of the orbit. Neoplasms of the orbit.
Diseases of the conjunctiva	Acute infectious conjunctivitis. Classification. Treatment. Chronic conjunctivitis. Classification. Treatment. Allergic conjunctivitis. Classification. Treatment. Degenerative changes in the conjunctiva. Tumors of the conjunctiva. Treatment.
Trachoma	Etiology of trachoma, stage of disease. Complications and consequences of trachoma. Differential diagnostics.

	Prevention and treatment of trachoma.
Diseases of the cornea and sclera	General symptoms of corneal disease. Exogenous keratitis. Endogenous keratitis. Etiology, clinical presentation, treatment. Corneal ulcer. Etiology, clinical presentation, treatment. Vitamin deficiency of the cornea. Outcomes of keratitis. Types of treatment of keratitis of their consequences. Scleritis. Clinical presentation, treatment.
Diseases of the vascular tract	Disease of the iris. Iridocyclitis. The clinical presentation, diagnosis, treatment. Chorioretinitis. The clinical presentation, diagnosis, treatment. Degenerative changes in the vasculature. Congenital malformations. Neoplasm of the vascular tract. Diagnostics. Treatment.
Diseases of the retina and optic nerve	Retinites. Changes in the retina in general diseases. Clinical presentation. Treatment. Degenerative changes in the retina. Clinical presentation. Treatment. Inflammatory and non-inflammatory diseases of the optic nerve. Features of the clinical presentation. Treatment. Congenital anomalies and neoplasms of the retina and optic nerve. Features of diagnosis and treatment.
Glaucoma	Definition of glaucoma. Normal and elevated IOP. Etiology, pathogenesis and classification of glaucoma. Acute attack of glaucoma. Features of the clinical presentation. Treatment. Absolute glaucoma. Clinical presentation. Treatment. Early diagnosis of glaucoma. Methods of treatment of glaucoma.
Diseases of the lens. Prevention and treatment	Definition of cataract. Classification of cataracts. cataracts due to general diseases. Modern principles of cataract treatment. Disorders of vitreous body.
Damage to the organ of vision and their prevention. Organization of eye care	Causes and Classification of Eye Trauma. Damage to the eyelids. Blunt trauma of the ophthalmic apple. Injury of the orbit. Diagnostics. Treatment. Eye burns. Classification. Methods of treatment. Organization of eye care for the population. Disability by sight(vision).
Eye diseases in tropical countries	Features of ocular pathology in countries with tropical climates. Classification of eye diseases in tropical countries. Ophthalmic helminthiases (main types). Ophthalmic diseases. Treatment, prevention. Change of eyes in general diseases. Treatment. The defeat of the eye in case of vitamin deficiency . The defeat of the organ of vision by the poisons of animals and plants

**Developers:**

Professor of the Department of Eye Diseases

P.A.Gonchar

Head of the Department of Eye Diseases

M.A.Frolov

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Forensic medicine</b>
<b>The workload of the discipline</b>	<b>3 Units (108 hours)</b>
<b>The summary of the discipline</b>	
<b>Topics</b>	<b>Content of topics</b>
Procedural and organizational issues of forensic medical expertise. Examination of the scene and the corpse at the place of its discovery.	<ol style="list-style-type: none"> <li>1. The structure of the forensic medical service in the Russian Federation, the legal regulation of forensic medical examination, the limits of its competence.</li> <li>2. The objects of forensic medical examination, methods of their expert examination, the capabilities of the diagnostic.</li> <li>3. The rights and the obligations of the expert and the expert in the field of medicine while performing primary investigation (examination of the scene)</li> <li>4. Investigative examination. The order of examination of the scene (the corpse at the place of its discovery), procedural and organizational forms of participation of the doctor in it, especially taking into account the category, kind and type of death.</li> </ol>
Forensic medical thanatology (General and particular). Forensic toxicology (General and particular)	<ol style="list-style-type: none"> <li>1. Thanatology (terminal conditions; euthanasia; lethargy; early and late post-mortem changes). Medical and legal aspects of the statement of death, the establishment of the fact of death.</li> <li>2. Methods of research and expert evaluation of supravital reactions, early and late post-mortem changes, destruction of the corpse by animals, insects and plants. Establishment of the time of death.</li> <li>3. Causes of death in case of various diseases, injuries and poisoning and their morphological diagnosis</li> </ol>
Forensic traumatology (General and particular)	<ol style="list-style-type: none"> <li>1. The study of injuries (bruises, abrasions, wounds, fractures, etc.). Mechanisms of formation, morphological properties and distinctive features of the damage. The establishment of the gun injuries based on its properties and characteristics of the self- damage.</li> <li>2. Mechanical, gunshot, car injuries, disease and death from extreme external factors. Features of thanatogenesis in case of various types of external influence.</li> </ol>

Forensic medical examination of live person.	<ol style="list-style-type: none"> <li>1. Procedure and organization of medical examination of victims, accused, etc. Rules and Medical criteria for determining the severity of damage to human health. Examination of the definition of loss of general and occupational disability. Forensic documentation.</li> <li>2. Examination related to crimes against sexual inviolability of the person, examination in case of previous pregnancy, delivery.</li> </ol>
Forensic medical examination of the corpse (sectional study of the corpse).	<ol style="list-style-type: none"> <li>1. The reasons for forensic medical examination (research) of the cadaver. Documentation of forensic medical examination. Principles of construction of forensic medical diagnosis and conclusions (conclusion) at forensic medical examination (research) of a corpse. Execution of medical death certificate (ICD).</li> <li>2. Forensic medical examination in case of sudden death.</li> <li>3. Forensic medical examination of the cadaver of a newborn baby.</li> </ol>
Laboratory research methods in forensic medicine. Examination of the case materials. Forensic medical examination of professional violations of healthcare workers.	<ol style="list-style-type: none"> <li>1. Examination of material evidence of biological origin (blood, semen, saliva, hairs). Methods of identification, removal and packaging of traces and material evidence of biological origin.</li> <li>2. Requirements for execution of medical documentation, description of the injuries detected in the patient.</li> <li>3. Professional violations of healthcare workers and responsibility for them. Iatrogenia, accident in medical practice, defective and improper medical care, medical error, etc.</li> </ol>
Forensic medical examination of mechanical asphyxia.	<ol style="list-style-type: none"> <li>1. General characteristics of in vivo mechanical asphyxia. Signs of asphyxia in external and internal examination of the cadaver. Principles of construction of the forensic medical diagnosis and conclusions (conclusion) at forensic medical examination (research) of a cadaver. Execution of medical death certificate (ICD).</li> <li>2. Thanatogenesis in different types of mechanical asphyxia</li> </ol>

**Developers:**

Assistant lecturer of the Department of Forensic medicine

Asiya R. Bashhirova

The head of the Department of Forensic medicine

Dmitriy V. Sundukov

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Health and Safety</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Basic concepts of the discipline "Life Safety"	Definitions of basic concepts of the discipline. The value of life safety in the development of Russia. Components of the study of life safety. Problems and prospects of development of the LS.
Theoretical basics of life safety	Typical system "man - environment". Industrial, municipal, domestic, natural environment. Human interaction with the environment. The basis for optimal interaction.
Risk	Risk Assessment. Damage. The concept of risk.
Emergency situations of natural character and the protection of population from consequences	Geophysical, geological, meteorological, agrometeorological, Maritime dangerous hydrological phenomena; natural fires. Characterization of factors affecting sources of emergency situations of natural character.
Emergency situations and protection of population from consequences	fire, explosion, risk of explosions; accidents involving the release (or threat of release) of dangerous chemical substances (DCS); accidents involving the release (or threat of release) of radioactive substances (RS); accidents involving the release (or threat of release) of biologically hazardous substances (BHS). Effects of sources of emergency situations of technogenic character. Development phases of emergencies.
The world around us. Hazards arising in everyday life, and safe behavior	The world and of man, the nature of their interaction. Man as object and subject of the security. The situation arising in the process of human activity. Features of the city as a habitat. Danger areas in the city.
Security management activity	Institutional framework for the management of life safety. Legal framework for the management of environmental quality. Management of environmental quality. Regulation of environmental quality.
Monitoring as a basis for safety management of human activities	Types of monitoring: environmental, biospheric, social-hygienic. The use of environmental monitoring data in management of environmental quality.
Harmful dependencies and their	Computer addiction. The effect of alcohol on the human



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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Disaster Medicine</b>
<b>The amount of discipline</b>	<b>4 CU (144 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Organization and bases activity of disaster medicine service	Organization and bases activity of disaster medicine service. Objectives and bases of organization of United state system aimed at the prevention and the elimination of sequences of extreme situations (ES). Objectives, emergency organization structure and bases activity of Russian disaster medicine service. Objectives and emergency organisation structure of Medial civil defence service.
Protection of population from defeat factors at ES	Protection of population from defeat factors at ES. Organization of the protection of population at ES/ Principles and methods of the protection. Measures for protection of population. Notification of population. Characteristic of protective construction. Characteristic of personal protective equipments. The order of the protection, accumulation, storage and distribution of personal protective equipments. Evacuation of population. Organization of dosimeter, chemical and bacteriological control. Regimes of the protection of population (regimes of the behavior. Special treatment. Medical protection of population at ES. Definition and measures of medical protection. Medical protective equipment. Table medical personal protective equipments. Preparation of medical establishments to activity at ES.
Organization of medical-sanitary maintenance of population at ES	Organization of medical-sanitary maintenance of population at ES. Organization of medical aid of population at ES. Organization of medical-evacuative maintenance of population at ES. Management disaster medicine service. Medical-sanitary maintenance during liquidation of technogenic accidents. Medical- sanitary maintenance during liquidation of natural disaster. Organization of medical supply at ES. Organization of medical supply establishments aimed for the medical-sanitary maintenance of population at ES. Preparation of establishments of medical supply to activity at ES

**Developers:**

Associate Professor of the Department of Disaster Medicine  
Associate Professor of the Department of Disaster Medicine  
Head of the Department of Disaster Medicine

Mitish V.A.  
Paskhalova Yu.S.  
Sokov S.L.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Propaedeutics of Internal Diseases</b>
<b>The amount of discipline</b>	<b>9 CU (324 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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, cholecystitis, 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)
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**Developers:**

Assistant of the Department of Internal Medicine Propaedeutics

Avdoshina S.V.

Head of the Department of Internal Medicine Propaedeutics

Kobalava Zh.D.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Radiodiagnosis</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Physical and technical fundamentals of radiation diagnosis	Types of radiation, their physical nature, methods based on various types of radiation. Properties of various types of radiation, the possibility of radiation research methods in the evaluation of various organs, systems, tissues. Know the schematic device of the x-ray apparatus, the principles of obtaining x-ray radiation, have an idea of the bremsstrahlung and characteristic radiation. Using the example of X-ray properties to understand the principles of imaging in radiation diagnostics.
Radiation study of the lungs.	Diagnostic capabilities of various techniques. How to evaluate the X-ray image of the lungs by syndromes reflecting the morphological structures of the lungs. When analyzing the X-ray image of the lungs, determine the size of the pulmonary field by the symptoms: The position of the diaphragm, the state of the intercostal spaces, the position of the mediastinal organs. Assess the state of the lung parenchyma, which is seen in the images by the syndrome of “transparency” in the form of its increase, manifested by X-ray illumination and a decrease in manifested by X-ray darkening (shadow). Characterize the shadow or enlightenment by the symptoms adopted in radiology: the number, shape, size, location, contours, structure, intensity, mobility and adapt them to the lungs.
Beam examination of the heart and blood vessels.	When analyzing the X-ray image of the heart, determine the state of the pulmonary pattern in order to identify signs of pulmonary hypertension. To assess the state of transparency of the pulmonary fields to determine hemosiderosis of the lungs. Studying the X-ray image of the heart itself to identify changes in hemodynamics, leading through changes in the chambers of the heart to increase or decrease the radiological arcs, which determine, in turn, the shape, position, size of the heart. Acquired heart defects, in particular, mitral and aortic, both pure and combined and combined, serve as an illustration of

	the principles of analysis. Reflect the identified changes in the study protocols.
Radiographic study of the digestive system	During analyzing the x-ray image to determine the phase of the study. In the relief phase, assess the condition of the mucosa in the norm of each section of the digestive tube. To reveal the signs of various departments of a healthy digestive canal in the phase of tight filling. Evaluate the functional symptoms (secretion, peristalsis, tone, evacuation) of the digestive tube.
Radiological examination of the osteo-articular system	Diagnostic capabilities of each of the methods used to assess the various components of the musculoskeletal system. Signs of recognition of the norm and pathology in the x-ray image. When analyzing an X-ray image, assess the condition of the soft tissues surrounding the bones and joints. - assess the joints detected in the pictures, - assess the condition of the periosteum, - evaluate the image of the bones according to the symptoms adopted in radiology
Fundamentals of radiation therapy.	Students are introduced to various types of radiation and their characteristics (x-rays, gamma rays, beta rays, inhibitory cures, protons and electrons in radiation therapy. The methods of radiation therapy (radical, palliative radiation therapy, remote, interstitial, intracavitary, contact, intravenous, same-sex and multi-field, small-fractional and large-fractional) and pathological processes in which they are used are considered. Complications of radiation therapy and methods for their prevention and treatment.

**Developers:**

Associate Professor, Department of Oncology and X-ray Radiology,

Kunda M.A.

Associate Professor of the Department of Oncology and X-ray Radiology

Zapirov G.M.

Head of the Department of Oncology and X-ray Radiology

Kharchenko N.V.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Faculty Therapy</b>
<b>The amount of discipline</b>	<b>8 CU (288 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Analysis of the chart history.	Curation of patients.
Pneumonia. Tuberculosis. Lungs' cancer. Pleurisy	Features of modern classification, diagnosis and course of pneumonia. Complications. Lesions of the pleura (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. Pulmonary hypertension. Chronic pulmonary heart. Treatment.	Etiology. Pathogenesis. Clinic. Respiratory failure. Pulmonary hypertension. Chronic pulmonary heart. Treatment.
Rheumatism. Heart defects. Pericarditis.	The main manifestations. Mitral heart defects. Diagnostics. Treatment.
Infective endocarditis	Aortic defects. Heart damage. Extracardiac manifestations. Features of the current 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. Exercises with physical activity: types, methods of conducting, indications and contraindications, interpretation. Treatment. Disorders of rhythm and conduction.
Acute Coronary Syndrome	Etiology. Pathogenesis. Typical and atypical forms. Classification, types of myocardial infarction. Diagnostics. Complications. Treatment.
Hypertonic disease	Diagnostics, classification, stratification by the risk of cardiovascular complications. Secondary hypertension. Clinical picture. Flow. Diagnostics. Treatment.
Diabetes	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Nephritis	Glomerulonephritis. Classification. Principles of diagnosis and therapy. Pyelonephritis. Amyloidosis.
Acute damage to the kidneys. Chronic kidney disease.	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment. Renal replacement therapy.

Peptic ulcer and duodenal ulcer.	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Hepatitis.	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Cirrhosis of the liver. Alcohol sickness.	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Complications. Treatment.
Diseases of the small intestine.	Syndrome of impaired absorption (celiac disease, sprue, Whipple's disease, Crohn's).
Diseases of the large intestine.	Nonspecific 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 of ankylosing spondylitis, deforming osteoarthritis, gout.
Anemia	Iron-deficiency anemia. B12-deficiency anemia. Hemolytic anemia.
Leukoses are acute. Chronic leukemia. Lympho-myeloid leukemia.	Etiology. Pathogenesis. Clinic. Classification. Diagnostics. Treatment.

**Developers:**

Assistant of the Department of Faculty Therapy

Goreva L.A.

Head of the department of faculty therapy

Moiseev V.S.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Occupational diseases</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Professional pathology of the respiratory system. Pneumoconiosis.	Introduction to the clinic of occupational diseases and its tasks. Issues of diagnosis and medical prevention. Pneumoconioses, classification. Silikatoza, anthracosis, pneumocania electric welders, aluminosis, pneumocanioses from the effects of plant dust. Berylliosis Dust bronchitis. Professional asthma. Bronchoallergosis.
Vibration disease. Noise sickness.	The clinical picture of the disease associated with the effects of local vibration and the combined effects of local and general vibration. Stage of the disease, diagnosis, treatment, prevention, prognosis.
Occupational diseases of the musculoskeletal system.	Arthralgia, arthrosis, polyarthritis, aseptic necrosis of bones, bursitis, tendovaginitis, dyskinesia, peri-arthritis of the shoulder joint, shoulder epicondylitis, professional polyneuritis and radiculitis.
Poisoning in everyday life	Classification. Diagnostic methods. The main clinical syndromes. General principles of emergency treatment: prevention of further contact with poisons of its absorption, removal of poison from the body, antidotes, treatment of syndromes associated with intoxication. Acute poisoning with carbon monoxide, amido and nitro compounds, alcohol, hypnotics and tranquilizers, acids and alkalis. Intoxication with chemicals used in agriculture. Acute and chronic poisoning with organochlorine and phosphorus compounds, organic mercury compounds, aromatic hydrocarbons (benzene)

**Developers:**

Associate Professor of Hospital Therapy with a course  
Clinical Laboratory Diagnostics

Aleksandrova M.R.

Head of the Department of Hospital Therapy with a course  
clinical laboratory diagnostics

Ogurtsov P.P.

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

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Hospital Therapy</b>
<b>The amount of discipline</b>	<b>12 CU (432 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Cardiology	Hypertension, secondary hypertension, acute coronary syndrome, myocardial infarction, koronarogennye and noncoronary false angina, arrhythmias, and cardiac conduction, acquired heart disease, pericarditis, cardiomyopathy (hypertrophic, dilated, restrictive), myocarditis, infectious endocarditis, acute and chronic heart failure , atherosclerosis and dyslipidemia.
Pulmonology	Acute bronchitis and chronic obstructive pulmonary disease, intestinal and infiltrative lung diseases, bronchial asthma, pleural lesions (pleurisy, hydrothorax, pneumothorax, chronic respiratory failure, acute respiratory failure and acute respiratory distress adult syndrome, pulmonary hypertension syndrome, chronic pulmonary insufficiency, pulmonary hypertension syndrome, chronic pulmonary insufficiency and acute respiratory distress syndrome, pulmonary hypertension syndrome, chronic respiratory failure and acute respiratory distress syndrome of adults apnea.
Nephrology	Pyelonephritis, acute and chronic glomerulonephritis, acute kidney damage and chronic kidney disease.
Hematology	Acute leukemia, chronic myelo-and lymphoproliferative diseases, Hodgkin's lymphoma, iron deficiency anemia, anemia of chronic disease, megaloblastic and aplastic anemias, coagulopathy, paraproteinemic hemoblastosis.
Rheumatology	Rheumatoid arthritis, systemic scleroderma, antiphospholipid syndrome, systemic lupus erythematosus, periarteritis nodosa, dermatomyositis, acute rheumatic fever and chronic rheumatic heart disease, gout, deforming osteoarthritis.
Gastroenterology	Gastroesophageal reflux disease, functional dyspepsia and chronic gastritis, peptic ulcer and 12 duodenal ulcers, diseases of the small and large intestines, maldigestion syndrome and malabsorption syndrome, chronic pancreatitis, chronic hepatitis, cirrhosis of the liver, jaundice, ipt, and a combination of those who have the symptoms and if they are easily affected by the symptoms, they can become a subculture and will suffer from the development of liver disease.

Clinical laboratory diagnosis	Fundamentals of the organization of laboratory services. Areas of research, pathological and non-pathological variations of laboratory results, stages of laboratory research, molecular genetic diagnostic methods, genetic research in the diagnosis and prognosis of the development of multifactorial diseases, pharmacogenetics.
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**Developers:**

Associate Professor of Hospital Therapy with a course  
Clinical Laboratory Diagnostics

Aleksandrova M.R.

Head of the Department of Hospital Therapy with a course  
clinical laboratory diagnostics

Ogurtsov P.P.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Endocrinology</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Diabetes mellitus. Non severe disease. Treatment. Medical emergencies.	Diabetes mellitus, etiology, pathogenesis, classification, clinical and laboratorial diagnostic methods. Treatment. Insulin therapy.  Medical emergencies in diabetology: diabetic ketoacidosis (DKA), nonketotic hyperosmolar coma, lactic acidosis and hypoglycemic coma.
Late complications of Diabetes mellitus.	Retinopathy, Nephropathy, Diabetic neuropathy, angiopathy, Diabetic foot. Manifestation stages, diagnostic criteria and treatment.
Diseases of the thyroid and parathyroid gland.	Thyroid disease. Hormonal and radioisotope studies, thyroid scan, thyroid ultrasound. Goiter: endemic and sporadic. Diffuse toxic goiter. Thyrotoxic crisis. Endocrine ophthalmopathy. Hypothyroidism. Hypothyroid coma. Acute suppurative thyroiditis. Subacute thyroiditis (de Quervain). Chronic fibrous thyroiditis (Riedel goiter). Autoimmune thyroiditis. Hyper and hypo parathyroidism.
Diseases of the hypothalamus	Cushing's disease: etiology, classification, clinical picture. Laboratory and instrumental diagnostic methods. Ectopic ACTH-syndrome. Acromegaly and Gigantism. Diabetes insipidus. Obesity. Panhypopituitarism.
Diseases of Adrenal gland.	Adrenal gland diseases; Primary hypocorticism. Acute adrenal insufficiency. Primary hyperaldosteronism (Conn's syndrome). Pheochromocytoma. Catecholamine crisis. Exogenous cushing syndrome.

**Developers:**

Associate Professor of Hospital Therapy with a course  
Clinical Laboratory Diagnosis

Kurnikova I.A.

Head of the Department of Hospital Therapy with a course  
clinical laboratory diagnostics

Ogurtsov P.P.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Infectious diseases</b>
<b>The amount of discipline</b>	<b>9 CU (324 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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
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. Infectious-toxic shock. Meningitis. Edema is the swelling of the brain.
Helminthiases(worm infections)	Nematodose. Ascariidosis Trichocephalosis Enterobiosis Ankylostomidosis Strongyloidosis Trichinosis Filariatosis Cestodoza.

**Developers:**

Associate Professor, Department of Infectious Diseases  
with courses of epidemiology and phtisiology.

Voznesensky S.L.

Head of the Department of Infectious Diseases  
with courses of epidemiology and phtisiology

Kozhevnikova G.M.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Phthisiology</b>
<b>The amount of discipline</b>	<b>5 CU (180 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to the specialty	History of phthisiology. Epidemiology of tuberculosis in the world and the Russian Federation. The etiology of tuberculosis, the species properties of the office. Pathogenesis of tuberculosis. The concept of the disease and latent tuberculosis infection. Pathomorphology of tuberculous inflammation.
Prevention of tuberculosis.	Social prevention of tuberculosis. Immunization against tuberculosis, characteristic of anti-tuberculosis immunity. Work in the foci of tuberculosis infection. Chemoprophylaxis of tuberculosis. Tuberculosis infection control
Early detection of tuberculosis.	Measures for the early and timely detection of adult tuberculosis. Measures for early and timely detection of tuberculosis in children and adolescents.
Diagnosis of tuberculosis	Complaints suspicious of tuberculosis, especially respiratory and intoxication syndromes in tuberculosis. Microbiological diagnosis of tuberculosis. X-ray diagnostics of respiratory tuberculosis. Laboratory and instrumental methods for the diagnosis of tuberculosis. Diagnostic algorithm for examining a patient with suspected tuberculosis. Immunological methods for the diagnosis of tuberculosis (Mantoux reaction, diaskintest, IGRA tests).
Organization of tuberculosis care. Treatment of tuberculosis.	Tuberculosis dispensary: goals, objectives, structure, functions. Group dispensary tuberculosis patients. Foci of tuberculosis infection. Anti-epidemic measures in the outbreaks. Treatment of tuberculosis: anti-TB drugs, chemotherapy regimens.
Classification of tuberculosis Primary tuberculosis in	Classification of tuberculosis (Russian, WHO, ICD-10). Primary tuberculosis in children: clinical forms, features of

children and adolescents. Secondary respiratory tuberculosis.	diagnosis and course. Clinical and radiological characteristics of limited forms of tuberculosis: focal, tuberculoma. Clinical and radiological characteristics of infiltrative tuberculosis. Clinical and radiological characteristics of disseminated tuberculosis. Clinical and radiological characteristics of caseous pneumonia. Clinical and radiological characteristics of cavernous tuberculosis. Clinical and radiological characteristics of chronic forms of tuberculosis: fibrous-cavernous and cirrhotic.
Beyond Thoracic Tuberculosis.	Pathogenesis of extrathoracic tuberculosis. Tuberculous meningoencephalitis. Tuberculosis of the genitourinary system. Osteo-articular tuberculosis. Abdominal tuberculosis. Peripheral lymph node tuberculosis.
Tuberculosis in special situations	Clinical and radiological features of tuberculosis in patients with HIV infection, depending on the degree of immunosuppression. Features of diagnosis of tuberculosis in patients with HIV infection. Tuberculosis during pregnancy: features of the course, diagnosis, management. Tuberculosis and diabetes. Tuberculosis in individuals receiving cytotoxic and immunosuppressive therapy.

**Developers:**

Associate Professor, Department of Infectious Diseases  
with courses of epidemiology and phthysiology

Zimin V.N.

Head of the Department of Infectious Diseases  
with courses of epidemiology and phthysiology

Kozhevnikova G.M.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Outpatient therapy</b>
<b>The amount of discipline</b>	<b>12 CU (432 hours)</b>
<b>Course Description</b>	
<b>The name of sections (themes) of discipline</b>	<b>The summary of discipline:</b>
Organization of the work of outpatient clinics. Organization of the local therapist and general practitioner work.	<ol style="list-style-type: none"> <li>1. The general principles of the organization of the outpatient clinics. Organization and content of work of therapeutic department clinics.</li> <li>2. Organization of the local therapist and general practitioner.</li> </ol>
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.	<ol style="list-style-type: none"> <li>1. Fever and low-grade fever in outpatient practice. Differential diagnosis. Management of patients.</li> <li>2. Interpretation of blood count in outpatient practice, highlighting the main syndromes and initial diagnosis. Anemic syndrome.</li> <li>3. The interpretation of urinalysis. Urinary Syndrome. Urogenital diseases in general practice.</li> <li>4. Respiratory diseases in outpatient practice. Diseases of the circulatory system in the outpatient practice.</li> <li>5. Diseases of the digestive system in the outpatient practice.</li> <li>6. Endocrine, nutritional and metabolic disorders in outpatient practice.</li> <li>7. Articular syndrome in outpatient practice.</li> <li>8. Somatoform disorders in general practice.</li> <li>9. Headache syndrome in general practice.</li> <li>10. The role of the doctor's clinic in detecting cancer. Keeping cancer patients at different stages of the disease.</li> <li>11. Alcohol poisoning and alcoholic disease in the practice of the local therapist.</li> <li>12. Iatrogenic illness in outpatient practice. Drug-induced diseases.</li> </ol>



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**Medical Faculty  
ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b><i>General surgery</i></b>
<b>Volume of discipline</b>	<b>6 points of credit (216 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>1. General surgery issues</b>	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..
<b>2. Particular issues of surgery</b>	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. Special diagnostic methods in surgery.

**Developers:**

Associate Professor, Department of Surgery

PhD . A.A. Barkhudarov

Professor Head of the Department of Surgery

MD Professor. A.E. Klimov

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Anesthesiology, Resuscitation, Critical Care</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Анестезиология. Fundamentals of modern anesthesiology.	Aim and tasks of anesthesiology aid. Classification of modern methods of anesthesiology. Local anesthesia. General anesthesia. Procedure Advantages and disadvantages, Indications and contraindications. Dangers and complications, their prophylaxis and treatment.
Pain syndrome. Acute and chronic pain.	Modern conception of pain. Pharmacologic agents, administered for pain management. Pain management in the post- operative period. Chronic pain syndrome management.
Reanimatology. Fundamentals of modern reanimatology. Cardiopulmonary resuscitation. Post- resuscitation period.	Methods of airway patency recovery. Basic Cardiopulmonary resuscitation algorithm Diagnostics of brain death. Craniocerebral hypothermia.
Intensive therapy Acute respiratory distress	Intensive therapy of ARDS. Respiratory support. Selecting the ventilation parameters. Indications for Mechanical ventilation. Procedures.
Acute cardio- vascular insufficiency.	Intensivetherapy of acute cardio-vascular insufficiency. Central hemodynamics monitoring. Inotropic and vasoactive agents administration.
Modern aspects of infusion- transfusion therapy.	Volemic status evaluation. Infusion- transfusion therapy indication. Infusion agents. Basis and correction of infusion- transfusion therapy. Transfusion of packed red blood cells and blood components. Centralveincatheterization.
Homeostasis	Etiology and pathogenesis of acid base disturbances. Types of disturbances. Diagnosis of disturbances. Corrective methods in acid base shifts. Aqueous sector: volume and ionic content. Electrolyte balance regulation. Diagnosis of disturbances. Osmolality. Electrolyte disturbances prophylaxis and correction.
Shock. Extracorporeal methods of treatment.	Classification of shock. Clinical picture. Diagnosis. Intensive therapy. Extracorporeal methods of treatment.
Acute disorders of consciousness. Intensive therapy of comatose state.	Classification of comatose state. Primary diagnostics algorithm and treatment of comatose state. Level of consciousness evaluation. Monitoring. General principles of comatose state intensive therapy. Cerebral edema therapy.

Sepsis. Infection in ICU.	Sepsis. Clinical manifestations. Diagnostics. Modern principles of antibiotics therapy. Intensive therapy.
Artificial feeding in critical state	Diagnosis of nutritional insufficiency. Evaluation of energy requirements and contents of artificial nutrition. Effectiveness of artificial nutritional therapy. Algorithm and protocol of nutritional support in the ICU.

**Developers:**

Associate Professor of the Department of Anesthesiology and Resuscitation      Moroz V.A.

Head of the Department of Anesthesiology and Resuscitation      Butrov A.V.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<i>Facultative Surgery</i>
<b>Volume of discipline</b>	<b>5 points of credit (180 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
<b>Particular issues of surgery</b>	<p>1. Appendicitis. Acute appendicitis. Clinic. Diagnostics. Treatment. Complications of appendicitis. Clinic. Diagnostics. Treatment. Chronic appendicitis. Clinic. Differential diagnosis. Indications for surgery.</p> <p>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.</p> <p>3. Bowel disease. Crohn disease. Ulcerative colitis. Clinic. Diagnostics. Treatment. Complications. Diverticulosis of the large intestine. Complications. Diagnostics. Treatment. Colon cancer. Clinic. Diagnostics. Treatment.</p> <p>4. Breast disease. Benign breast tumors. Views. Method of treatment. Breast cancer. Classification. Clinic. Diagnosis, treatment.</p> <p>5. Liver disease. Liver cancer. Views. Diagnostic method. Treatment. Portal hypertension syndrome. Cirrhosis. Diagnostics. Complications. Clinic. Treatment. Echinococcus of the liver. Species. Diagnosis. Treatment.</p> <p>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.</p> <p>7. Diseases of the rectum. Hemorrhoids. Complications. Diagnostics. Treatment. Benign tumors of the rectum. Clinic. Diagnostics. Treatment. Rectal cancer. Diagnostics. Treatment.</p> <p>8. Vascular disease. Varicose disease. Diagnostics. Clinic, complications. Treatment.</p>

	<p>Atherosclerosis of vessels of the lower extremities. Clinic. Diagnostics. Treatment. Complications. Differential diagnosis of atherosclerosis and obliterating endarteritis of the lower extremities.</p> <p>9. Thyroid disease. Thyrotoxic goiter. Clinic. Diagnostics. Treatment.</p> <p>Graves' disease. Clinic. Diagnostics. Treatment.</p> <p>Endemic goiter. Classification, diagnosis. Treatment, prevention. Complications of thyroid surgery.</p> <p>10. Calculous cholecystitis. Acute cholecystitis. Clinic. Diagnostics. Treatment. Complications of cholecystitis.</p> <p>Chronic cholecystitis. Clinic. Diagnostics. Treatment. Type of operation.</p> <p>11. Intestinal obstruction. Classification. Clinic. Methods of conservative and surgical treatment. Mechanical and dynamic intestinal obstruction. Classification. Reasons. Views. Clinic. Diagnostics. Treatment..</p> <p>12. Mechanical jaundice. Reasons. Diagnostic method. Treatment.</p> <p>13. Pancreatitis. Acute pancreatitis. Classification. Clinic. Diagnostics. Treatment. Complications. Chronic pancreatitis. Classification. Clinic. Methods of diagnosis and surgical treatment.</p> <p>14. Peritonitis. Classification. Etiopathogenesis. Clinic. Treatment. Ways to reduce mortality.</p> <p>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.</p>
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**Developers:**

Associate Professor, Department of Surgery

PhD . A.A. Barkhudarov

Professor Head of the Department of Surgery

MD Professor. A.E. Klimov

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Urology</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Fundamentals of social hygiene and organization of care for patients with urological diseases in the Russian Federation	Introduction to the specialty of urology. History of development of urology. Organization of specialized surgical care for patients with cardiovascular diseases. Features and forms of organization of care for patients with urological diseases in specialized hospitals. The organization of emergency urological care for patients with acute diseases and injuries of the urogenital system. Medical labor examination and rehabilitation of patients with urological diseases. Temporary disability. Terms of temporary disability and criteria for their duration in urological diseases. Organization of the examination of temporary disability. The concept of disability. Criteria for determining the disability groups of urological patients. Causes of disability of patients with surgical diseases of the genitourinary system. Rehabilitation of urological patients and disabled. Medical ethics and deontology. Features of ethics and deontology in urology, transplantology. The legal basis of the limits of resuscitation.
Physiological and clinical principles of urology	Basics of clinical physiology and pathophysiology. Genitourinary system. Water and electrolyte metabolism. Acid-base balance. Clinical pharmacology. Cardiac glycosides. Inotropic drugs. Antispasmodics. Diuretics. Antibacterial drugs. Drugs that affect hemostasis. Blood products and blood substitutes. Interaction and compatibility of drugs. Formation of the diagnosis and indications for surgery. Classification of the main diseases of the urogenital system.
Surgical anatomy and operative surgery of the kidneys, urinary tract and male genital organs	Surgical anatomy of the retroperitoneal space. Surgical anatomy of the scrotum organs. The lumbar region, muscles, blood supply, lymph flow and innervation. Bladder, blood supply, lymph flow, innervation. Surgical anatomy of the penis. Prompt access to the kidney, bladder.
Methods of diagnosis of diseases of the kidneys and urinary tract	Symptoms of urological diseases. Qualitative and quantitative analyzes of urine. Blood tests. Sample Reberg-Tareeva. Bacteriuria, determination of urine microflora sensitivity. Radiographic methods of diagnosis in urology: excretory urography, antegrade and retrograde urography,

	cystography, urethrography. Modern diagnostic methods: computed tomography, MSCT, MRI, angiography. Isotopic research methods in urology. The history of the development of endoscopic research methods in urology: urethroscopy, cystoscopy, ureteroscopy, nephroscopy. Ultrasound diagnostic methods.
Nonspecific inflammatory diseases of the kidneys and urinary tract, organs of the scrotum, penis	Acute pyelonephritis: etiology, pathogenesis, clinic, diagnosis and treatment. Pyelonephritis in pregnant women: pathogenesis, clinical features, diagnosis and treatment. Complications of acute pyelonephritis. Chronic pyelonephritis. Pararanephritis: etiology, pathogenesis, clinical presentation, diagnosis and treatment. Ormond disease. Acute cystitis: etiology, pathogenesis, clinic, diagnosis and treatment. Chronic cystitis. Acute prostatitis: etiology, pathogenesis, clinic, diagnosis and treatment. Chronic prostatitis. Acute non-specific urethritis: etiology, pathogenesis, clinic, diagnosis and treatment. Sharp cavern. Epididymitis: etiology, pathogenesis, clinic, diagnosis and treatment. Orchitis: etiology, pathogenesis, clinic, diagnosis and treatment. Balanoposthitis.
Urolithiasis disease	Etiology, pathogenesis, clinic, diagnosis of urolithiasis. Modern theories of stone formation. Renal colic: the mechanism of development and methods of stopping renal colic. Conservative therapy. Surgical treatment depending on the location of the calculus. Remote lithotripsy: indications, contraindications, complications. Endoscopic treatment of urolithiasis. Urolithiasis Metaphilic
Benign prostatic hyperplasia, prostate cancer.	Causes of benign prostatic hyperplasia (BPH). Features of the clinical picture, depending on the stage of BPH, complications. Conservative treatment of BPH. Surgical treatment of BPH: transvesicular adenomectomy, retropubic adenomectomy. Transurethral electrosurgical and other modern methods of surgical treatment of BPH. Postoperative complications, possible methods of their prevention and treatment. Causes of prostate cancer, pathogenesis and clinical features. Modern methods of diagnosis of prostate cancer. Conservative treatment methods. Surgical treatment.
Tumors of the kidneys and bladder	Etiology and pathogenesis of kidney parenchyma tumors and renal pelvis, clinical features. Modern methods of diagnosis of kidney tumors. Algorithm for examining patients with kidney tumors. Features of diagnosis of a tumor of the renal pelvis. Symptom Shevassu. Features of surgical treatment of patients with tumor thrombus in the renal vein, inferior vena cava. Features of surgical treatment of patients with a renal pelvis tumor. Modern minimally invasive treatment methods.
Acute renal failure, chronic renal failure, hemodialysis, peritoneal dialysis, kidney transplantation	Causes of acute renal failure, clinical presentation, diagnostic features. Stages of development of the disease, features of therapy, depending on the stage of development of the process. Chronic renal failure: causes of development, clinical picture, modern classification. Features of treatment

	<p>depending on the stage of development of the process. Hemodialysis: the history of the creation of a method of treatment, the importance of this technique for modern medicine and its use for the treatment of acute and chronic diseases. Peritoneal dialysis: the history of the creation of methods, indications and contraindications, methods of use. Kidney transplantation: ethical, medical and legal aspects, the importance of the achievements of pharmacology in solving the problem, especially the surgical technique.</p>
Hydronephrosis, nephroptosis, orthostatic varicocele, hydrocele.	<p>Hydronephrosis: causes of development, classification, clinic diagnosis, treatment. Rehabilitation of patients with postoperative period Nephroptosis: causes of development, clinical presentation, diagnosis, treatment (Rivoir operation in Pytel-Lopatkin modification). Orthostatic varicocele: causes of development, clinical presentation, diagnosis, treatment. Hydrocele: causes of development, clinic, diagnosis, treatment.</p>
Tuberculosis of the kidneys, ureters, bladder	<p>Etiology and pathogenesis of urogenital tuberculosis, clinical presentation, diagnosis. Features of treatment of the disease, depending on the stage of development of the process. Features of the pathogenesis of ureteric tuberculosis, clinic, diagnosis, treatment. Bladder tuberculosis: clinic diagnosis, treatment.</p>
Trauma to the kidneys, ureters, bladder and urethra. Male infertility. Erectile dysfunction.	<p>Trauma kidney: clinic, diagnosis, classification. Features of treatment depending on the degree of damage to the kidney. Ureteral injury: clinic diagnosis, treatment. Features of the development of intraperitoneal and extraperitoneal rupture of the bladder, clinic diagnosis, treatment. Urethral trauma: injury mechanism, clinic, diagnostic features, treatment. Primary suture of the urethra: indications and contraindications. Features of surgical treatment of post-traumatic strictures of the urethra, depending on their localization.</p>

**Developers:**

Professor, Department of Urology and Operative Nephrology  
with a course of oncurology

Kostin A.A.

Professor of the Department of Urology and Operative Nephrology  
with the course of oncurology

Vinogradov I.V.

Head of the Department of Urology and Operative Nephrology  
with the course of oncurology

Kaprin A.D.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Hospital Surgery, Pediatric Surgery</b>
<b>The amount of discipline</b>	<b>10 CU (360 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Abdominal Surgery.	Acute appendicitis. Peritonitis. Compartment syndrome. Acute cholecystitis. Liver abscess. Cholecystopancreatitis. Liver failure. Acute pancreatitis. Chronic pancreatitis. Liver injury. Cysts, abscesses and tumors of the liver. Echinococcosis, alveococcosis. Peptic ulcer and duodenal ulcer. Dumping syndrome. Hypoglycemic syndrome. Anemia. Alkaline reflux gastritis, reflux esophagitis. Non-healing or recurrent ulcers after vagotomy. Ulcerative colitis and Crohn's disease. Intestinal bleeding. Classification of intestinal obstruction.
Thoracic Surgery.	Semiotics of chest wall diseases. Diagnostic methods: non-invasive and invasive. Methods of surgical treatment. Surgical accesses. Inflammatory diseases: non-specific and specific. Chest wall tumors: benign and malignant. Congenital malformations of trachea. Traumatic injuries of the trachea. Tracheal stenoses: primary and secondary (compression), expiratory stenosis. Acquired esophageal-tracheal fistula. Tracheal tumors. Nonspecific inflammatory diseases of the lungs. Specific inflammatory diseases of the lungs. Bronchiectasis. Congenital malformations of the esophagus. Benign tumors of the esophagus. Esophageal carcinoma. Cysts and tumors of the diaphragm.
Cardiovascular Surgery.	Anatomical and physiological information about the cardiovascular system. History of Cardiovascular Surgery. Semiotics and classification of cardiovascular diseases. Non-invasive diagnostic methods. Invasive diagnostic methods. Methods of surgical treatment of vascular diseases. Surgical accesses. Vascular suture. Artery operations. The basic principles of surgical interventions on the heart. Interventional cardiology.
Pediatric Surgery.	Anatomical and physiological features of the child's

	<p>body. The principal differences in pediatric surgery. Features of examination of young children and newborns. Syndromology. General embryology and teratology. Features of the children's surgeon. Intensive therapy and reanimation of children's age. Etiology and pathogenesis of childhood surgical infection.</p>
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**Developers:**

Associate Professor of Hospital Surgery	Manzhos P.I.
Associate Professor of Hospital Surgery	Chinikov M.A.
Associate Professor at the Department of Hospital Surgery	Baranovich V.Yu.
Associate Professor of the Department of Hospital Surgery	G.I. Retunik
Head of the Department of Hospital Surgery	Faybushevich A.G.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Dentistry</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to the course of dentistry.	The 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 of diagnostics and interdisciplinary interaction. Principles, features of treatment. (Symptomatic and pathogenetic therapy)
Manifestations of somatic diseases in the mouth.	Manifestations in the mouth of diabetes mellitus, arterial hypertension, blood diseases, HIV infection.
Providing 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 diagnosis of head and neck organs.	The main objectives and principles of radiation diagnosis in the mouth. Types of radiation studies (CT, MRI, PET CT, Osteoscintigraphy)
The role of the dentist in solving interdisciplinary tasks.	Analysis of complex clinical cases using telemedicine tools and methods. Demonstration of the clinical material of the department (including live transmission of clinical situations from the RCRD).
Clinical modeling of outpatient situations requiring dental surgery.	Clinical modeling of the use of composite materials to eliminate the defects of hard tissues of teeth of different origin. Clinical modeling of the restoration of teeth using crowns, veneers and tabs. Demonstration of the possibilities of dental photography on 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 immunity in the oral cavity. Protective and barrier functions of the oral mucosa.	Clinical aspects of immunity in the oral cavity. Protective and barrier functions of the oral mucosa.

**Developers:**

Assistant of the Department of General and Clinical Dentistry

Gvozdikova E.N.

Head of the Department of General and Clinical Dentistry

Avanesov A.M.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Oncology, Radiotherapy</b>
<b>The amount of discipline</b>	<b>3 CU (108 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Lung cancer	Modern instrumental, morphological and laboratory diagnosis of lung cancer, stages according to the TNM system. Indications and contraindications for planning and conducting surgical, radiation and drug treatment. Monitoring and rehabilitation of patients after treatment.
Breast cancer.	Epidemiology and prevalence of breast cancer. A modern instrumental, morphological, laboratory diagnosis, including immunohistochemical and genetic studies, is presented. Modern radical surgical interventions, plastic surgery on the mammary gland are presented. The indications for radiotherapy and polychemotherapy are determined. hormone therapy.
Stomach cancer	Provides data on the diagnosis of gastric cancer, including x-ray, endoscopic, laboratory methods. The current data on the morphology of gastric cancer is presented. The issues of early gastric cancer, as well as TNM classification are considered. The types of radical and palliative operations are determined depending on the location of the tumor and its prevalence along the wall of the stomach. Presented modern drug therapy of gastric cancer, radiation therapy.
Esophageal carcinoma.	Modern diagnostics of esophageal cancer, allowing to determine the stage and prevalence of the pathological process. Modern surgical, radiation and drug treatments, monitoring and rehabilitation of patients are presented.
Colon cancer.	Provides data on modern instrumental, laboratory diagnosis of cancer of the colon and rectum. The issues of radical, cytoreductive and palliative surgery of colon cancer are considered depending on the tumor localization. Indications for chemotherapy and targeted therapy.
Lymphogranulomatosis.	Modern classifications of lymphomas are considered. Presents diagnostic methods and morphological features of lymphoma granulomatosis. Classification of the pathological process, modern chemotherapy, radiation therapy, complex treatment, rehabilitation
Liver cancer and pancreatobiliary cancer.	Modern data on diagnostics, features of the course of pancreatibiliary cancer and liver cancer are presented.

	The issues of elimination of tumor jaundice, preparation of patients for treatment: surgical, combined and complex. Features of the course of pancreatobiliary cancer and liver cancer. Long-term results.
Skin cancer and melanoma.	The statistical and epidemiological issues of skin cancer and melanoma are presented. The features of the development and metastasis of tumors are considered. Modern surgical, radiation and drug approaches to the treatment of these diseases. Features of metastasis and course of melanoma.
Chemotherapy of malignant neoplasms.	Modern drug therapy of human malignant neoplasms. The classification of drugs, their mechanisms of action and the importance of various drugs in private oncology.
Radiotherapy of malignant neoplasms.	Issues of modern use of various radiations for the treatment of malignant processes. The types of radiation and their use in various malignant tumors are presented. Modern methods of treatment on particle accelerators and interstitial therapy. Intravenous radiation therapy.
Thyroid cancer.	Statistics and epidemiology of thyroid cancer. The morphological structure of tumors. Clinical course. Radical operations. Remote and intravenous cancer therapy. Hormone replacement.

**Developers:**

Associate Professor, Department of Oncology and X-ray Radiology,

Kunda M.A.

Associate Professor of the Department of Oncology and X-ray Radiology

Zapiro G.M.

Head of the Department of Oncology and X-ray Radiology

Kharchenko N.V.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Traumatology &amp; Orthopedics</b>
<b>The amount of discipline</b>	<b>6 CU (216 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General questions of traumatology.	History of traumatology and orthopedy development. Bone tissue regeneration. Types of trauma and trauma care organization.
Principles 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 knee-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.	Osteoarthrosis of big and small joints, posttraumatic osteoarthrosis. Classification. Diagnostics. Treatment.
Osteoarthritis.	Specific and non-specific arthritis (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:**

Professor of the Department of Traumatology and Orthopedics

Lazko F.L.

Associate Professor of the Department of Traumatology and Orthopedics

Prizes A.P.

Head of the Department of Traumatology and Orthopedics

Zagorodniy N.V.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Obstetrics and gynecology</b>
<b>The amount of discipline</b>	<b>14 CU (504 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Gynecology	Operative obstetrics Propaedeutics of gynecologic diseases Inflammatory diseases of female genital system Disorders of menstrual function Pathology of the perimenopausal period Infertility and family planning Benign tumors of genital system Myoma uteri Hormonal disorders of breast Endometrioid heterotopiya Pretumoral and tumoral diseases of genitals Trophoblastic disease Impairments of development of genitals organs Anomalies of genital organs position. Female diseases of urinary system Typical gynecologic operations Emergency care in gynecology
Physiological obstetrics	Clinical anatomy and physiology of female reproductive system. Physiology of pregnancy. Physiology of labor. Physiology of the postnatal period and period of a neonatality
Pathological obstetrics	Pathological pregnancy Pathology of childbirth Maternal obstetric trauma Pathology of the postnatal period Physiology and pathology of the period of a neonatality
Operative obstetrics	Epidemiology, classification, conditions and indications for obstetric operations. Pregnancy-preserving surgical procedures. Cesarean section in modern obstetrics Vacuum extraction

**Developers:**

Associate Professor at the Department of Obstetrics and Gynecology  
with a course of perinatology

Lebedeva M.G.

Head of the Department of Obstetrics and Gynecology  
with a course of perinatology

Radzinsky V.E.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Pediatrics</b>
<b>The amount of discipline</b>	<b>10 CU (360 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Development, growth and nutrition of the child. Propedeutics of childhood diseases.	The organization of medical and preventive care for children. Fundamentals of the organization of the children's hospital and specialized pediatric care. Periods of childhood. Nutrition children. Physical and sexual development. Age-related morphological and functional features of organs and systems.
Neonatology. Diseases of newborns and young children	Introduction to Perinatology. Physiology and pathology of the newborn. Border conditions of newborns. Principles of rational feeding of newborns. Jaundice of newborns. Birth injury. Perinatal lesions of the nervous system.
Allergology. Allergic diseases.	Diseases of the upper respiratory tract. Lower respiratory tract infections: acute bronchitis, bronchiolitis, pneumonia. Chronic lung disease in children. Bronchial asthma. Diseases of the circulatory system.
Diseases of the cardiovascular system in children	Congenital heart defects and large vessels. Diseases of the myocardium and pericardium.
Rheumatology	Rheumatic fever. Diffuse connective tissue diseases: systemic lupus erythematosus, juvenile rheumatoid arthritis, juvenile dermatomyositis, systemic scleroderma. Systemic vasculitis.
Gastroenterology	Diseases of the digestive system
Nefrology	Diseases of the urinary system in children
Hematology. Blood diseases in children.	Hematopoietic diseases, hemorrhagic and thrombotic diseases
Endocrinology	Endocrine diseases in children
Infectious diseases in children	Infectious exanthema. Bacterial meningitis and meningoencephalitis. Herpesvirus infections. Acute intestinal infections. Malaria, HIV infection, tuberculosis, hemorrhagic fevers

**Developers:**

Professor of the Department of Pediatrics  
Associate Professor of the Department of Pediatrics  
Head of the Department of Pediatrics

Kuzmenko L.G.  
Kantemirova M.G.  
Ovsyannikov D.Yu.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of the discipline</b>	<b>Physical Culture</b>
<b>The amount of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Practical section	Topic 1. Athletics. Topic 2. Basketball. Topic 3. Badminton. Topic 4. Skiing. Topic 5. Volleyball. Topic 6. Football.

**Developers:**

Professor of the Department of Physical Education and Sport

Pushkin V.N.

Associate Professor of the Department of Physical Education and Sport

Razmakhova S.Yu.

Associate Professor of the Department of Physical Education and Sport

Shulyatev V.M.

## VARIABLE PART

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

*Medical Faculty*

### ANNOTATION OF ACADEMIC DISCIPLINE

**Educational program  
31.05.01 General medicine**

<b>Name of the Discipline</b>	<b><i>Russian Language (as Foreign Language)</i></b>
<b>General labour intensity</b>	<b>2 credits (72 ac. hours)</b>
<b>General Content of the Discipline</b>	
<p><b>Aims:</b> The course focuses on the teaching and mastering of the medical students' general communicative and professional communicative competences.</p> <p><b>Objectives:</b> knowledge of, correct and adequate usage of general medical terminology; professional vocabulary and idioms; competence in effective general and professional communication with a Russian-speaking hospital personnel or clinical setting in the situations of interaction with patients and specialists; ability to work with professional documents; ability and willingness to realize, correctly interpret the Russian hospital culture concepts; ability and willingness to carry out professional mediation between Russian specialists and those from his native country.</p>	
<b>Sections of the disciplines</b>	<b>Summary of sections</b>
<b>Theme 1.</b> Medical interview of a patient	Interviewing a patient with symptoms of a respiratory disease Interviewing a patient with symptoms of a cardiovascular disease Interviewing a patient with symptoms of a digestive disorder Interviewing a patient with symptoms of kidney disease
<b>Theme 2.</b> Fillinig in the medical documentation	Passport data of the patient Medical case history Medical record

**The developers are the associate professors of the Russian language department of Medical Institute V.B. Kurilenko, M.A. Makarova, Yu.N. Biryukova, K.V. Akhnina**

**The head of Russian language  
Department of Medical Institute**

**V.B. Kurilenko**

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<i>Discipline</i>	<b>Russian Language and Speech Culture</b>
<b>General labour intensity</b>	<b>2 credits (72 hours)</b>
<b>General content of the discipline</b> <b>Aims and objectives of discipline</b> Development and improvement of the integrative professional-communicative competence of future doctors that includes the following components: linguistic, sociocultural and national, strategic, compensatory, discursive, behavioral and others. That provides the achievement of the required level of communicative training, readiness and ability to solve professional-communicative tasks in different spheres of doctor's professional activities in compliance with the norms of social and relationship status.	
<b>Sections of the disciplines</b>	<b>Summary of sections</b>
<b>CULTURE OF ACADEMIC AND SCIENTIFIC COMMUNICATION</b>	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.
<b>CULTURE OF PROFESSIONAL COMMUNICATION</b>	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.

**The developers are the associate professors of the Russian language department of Medical Institute Yu.N. Gosteva, R.A. Arzumanova, M.A. Bulavina.**

**Head of Russian  
Language Department**

**V.B. Kurilenko**

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Chemistry of hydroxyaminoacids and carbohydrates</b>
<b>Volume of discipline</b>	<b>1 point of credit (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Hydroxyacids. Keto acids	Hydroxyacids. Structure and nomenclature of hydroxyacids. Reaction involving hydroxyl-group and carboxylic group. Behavior under the heating. Lactic acid, its formation during lactic fermentation and in muscles. The transformation of lactic acid into pyruvic acid during metabolism. Malic, tartaric and citric acids. Optical isomerism with examples of lactic and tartaric acids. Configuration, chirality, chiral center, enantiomers. Absolute and relative configuration. D-L and R-S nomenclature. Aldehyde and keto acids. Nomenclature. Chemical properties of aldehyde and keto acids. Pyruvic acid.
Amino acids	Amino acids that make up proteins: classification, structure, nomenclature, stereoisomerism, acid-base properties (formation of a bipolar ion). Formation of $\alpha$ -amino acids from keto acids: reductive amination and transamination reactions (pyridoxal catalysis). Chemical properties of amino acids. Biologically important $\alpha$ -amino acid reactions: deamination (oxidative and non-oxidizing), hydroxylation, decarboxylation of $\alpha$ -amino acids (formation of colamine, histamine, tryptamine). Acid-basic properties of amino acids. Transformations of amino acids in the body. Optical isomerism of $\alpha$ -amino acids.
Peptides and proteins	Peptides and proteins. Peptide hydrolysis. Determination of the amino acid sequence (methods of Edman, Senger, dansyl). Non-biological peptide synthesis with protection and activation of functional groups, removal of protection. The primary structure of proteins. Partial and complete hydrolysis. The concept of complex proteins. Glycoproteins, lipoproteins, nucleoproteins, phosphoproteins.
Carbohydrates	Carbohydrates. Carbohydrates in nature. The value of carbohydrates. Photosynthesis. Monosaccharides. Cyclo-chain tautomerism. D- and L- series. Reactions of monoses on functional groups. Glucose, mannose, galactose, fructose, ribose and deoxyribose; being in nature and biological significance. Vitamin C. Reducing and non-reducing

	disaccharides: sucrose, maltose, cellobiose, lactose. Polysaccharides: starch, glycogen, cellulose, pectins. Heteropolysaccharides: chondroitin sulfates, heparin, hyaluronic acid.
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**Developers:**

Associate Professor, Department of Organic Chemistry  
Associate Professor, Department of Organic Chemistry

Sorokina E. A.  
Listratova A.V.

The Head of Department of Organic Chemistry

Varlamov A. V.

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Physical methods in medicine</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Physical methods in medicine	Electrocardiography. Rheography. Audiometry. Oscillography.
	Ultrasound in medicine. Tomography. Lasers.
Radioactive methods in medicine.	Dosimetry. X-ray and electron microscopy.

**Developers:**

Associate Professor of the Department of Theoretical Physics and Mechanics Kovalchukov N.A.  
Head of the Department of Theoretical Physics and Mechanics Rybakov Yu.P.

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

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Clinical anatomy</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Anatomical foundations of anthropology	Human growth, growth curves. The size and shape of the body, the proportions of the body. Anthropometry and craniometry. Somatotypes and their anatomy.
Variable anatomy	Variable anatomy of the musculoskeletal system. Variable anatomy of the digestive and respiratory organs. Variative anatomy of the organs of the urogenital apparatus. The variability of the structure of the cardiovascular system. The variability of the structure of the nervous system.

**Developers:**

Associate Professor of the Department of Human Anatomy  
Head of the Department of Human Anatomy

N. I. Volosok  
Kozlov V.I.

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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Diagnostic of Gross Specimen and Microslide</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
	Histological technique. Methods of microscopy. Organelles and cytoplasm inclusions. Core. Cell division.
	Sex cells. Fertilization. Crusting, its types. Gastrulation, methods of gastrulation. Fetal development of birds. Provisional organs of embryos of birds.
	1) Epithelial tissue. Glands. 2) Blood. 3) Hemocytogenesis (blood formation) 4) connective tissue. Fibrous connective tissue. 5) Connective tissue with special properties. 6) Skeletal tissue: cartilage tissue, bone tissue.

**Developers:**

Associate Professor of the Department of Histology, Cytology and Embryology  
Head of the Department of Histology, Cytology and Embryology

Savrova O.B.  
Eremina I.Z.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>Name of discipline</b>	<b>BIostatISTICS</b>
<b>General labour intensity</b>	<b>1 credit points (36 Hours)</b>
<b>Course summary</b>	
<b>Topics</b>	<b>Content of topics</b>
BASICS OF BIOMEDICAL RESEARCH	<p>PLANNING 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.</p> <p>TYPES OF RESEARCH. Cross-sectional and longitudinal, prospective and retrospective studies; case-control study, cohort study, randomized clinical trials, meta-analysis.</p>
DESCRIPTIVE STATISTIC	<p>GRAPHICAL REPRESENTATION OF DATA The concept of statistical graphics, the basic elements of graphics, chart types. Histogram. Empirical distribution function and its properties.</p> <p>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.</p>
STATISTICAL ANALYSIS OF DATA.	<p>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.</p>

	<p><b>COMPARING THE GROUPS.</b> Testing 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. Bound and unbound samples.</p> <p><b>REGRESSION ANALYSIS.</b> 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.</p> <p><b>CORRELATION ANALYSIS.</b> Linear and rank correlation. Pearson's linear correlation coefficient, Spearman's rank correlation coefficient. Testing the hypothesis on the significance of the correlation coefficient.</p> <p><b>ANALYSIS OF THE RELATIONSHIP OF QUALITATIVE FEATURES.</b> Tables of conjugate features, the connection coefficients. Testing the hypothesis about the importance of the connection coefficients.</p> <p><b>ANALYSIS OF VARIANCE.</b> 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.</p>
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**Developers:**

Professor	V.D. Protsenko
Associate Professor	E.A. Lukianova
Associate Professor	T.V. Lyapunova
Head of Department Medical informatics and telemedicine	V.L. Stolyar

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	Clinical Biochemistry
<b>Volume of discipline</b>	1 CU (36 hours)
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to clinical biochemistry	Clinical biochemistry, as part of human biochemistry, and its role in studying the problems of modern medicine. The beginning of the genomic era and post-genomic technology. The systems approach is a general principle of post-genomic technologies. Biochemical view on the general patterns of formation of phenotypes. Introduction to the biochemistry of pathological processes. Approaches to the etiological classification of pathological processes.
Materials and methods for studying the pathogenesis of diseases	Individual variability of biochemical characteristics and ideas about “normal indicators”. Postgenomic technologies in the development of personalized medicine. Some organizational principles and general characteristics of the arsenal of clinical biochemistry. Basic research materials and biochemical classes of diagnostic molecular markers. Research methods for the pathogenesis of diseases of different etiologies, the role of bioinformatics and other post-genomic technologies
Proteins - like biopolymers	Studies of proteins in clinical biochemistry. Proteins - as biopolymers and objects of research in clinical biochemistry. The problems of determining and the significance of the estimates of total protein in various biological preparations. The main methods for determining the total protein content, automated systems and rapid methods. Proteinuria, importance in diagnosis
Proteins as diagnostic markers	Proteins, as diagnostic markers, enzymatic diagnostic methods. Enzymes as diagnostic markers. Immunochemical methods for testing individual proteins. Monoclonal antibodies as reagents in diagnostic systems. Modern approaches to the diagnosis of myocardial infarction.
Proteins as products of gene expression	Proteins, as products of gene expression, post-genomic technologies in the study of proteins: proteomics and the problems of determining individual protein in various biological preparations, the importance of identifying tissue-specific proteins
Studies of nucleic acids in clinical biochemistry	The role and significance of nucleic acids as molecular markers in the pathological processes of different etiologies. Polymerase chain reaction and some modern methods of

	DNA diagnostics of hereditary, multifactorial and infectious diseases. Diagnosis of viral infections on the example of herpes and hepatitis. Real-time PCR, post-genomic technologies in nucleic acid research, transcriptome.
DNA research and identification problems	Methods for detection of single nucleotide polymorphisms (restriction analysis and analysis of single-stranded conformational polymorphism). DNA sequencing. Types of DNA polymorphism, the establishment of associations with the risk of cardiovascular and other diseases. DNA research and identification problems.
Studies of carbohydrates in clinical biochemistry	The main carbohydrates in the human body. Some problems of diabetes. Methods for the determination of glucose and other carbohydrates in biological fluids. Mucopolysaccharidosis as a violation of carbohydrate metabolism.
Studies of lipids in clinical biochemistry	Some problems of atherosclerosis and other disorders of lipid metabolism. Determination of cholesterol and triacylglycerols, the role of these studies in the diagnosis of atherosclerosis. Other disorders of lipid metabolism and molecular methods for their diagnosis.
Intermediate exchange products as diagnostic markers.	Genetic and non-genetic diseases in which intermediate exchange products can serve as diagnostic markers. Amino acids and their derivatives as diagnostic markers. Understanding screening programs on the example of screening for phenylketonuria. Selective screening programs.
Molecular basis of tumor growth.	Postgenomic technologies and the search for molecular markers of malignant tumors. Principles of the use of molecular and biochemical methods in the diagnosis of cancer on the example of prostate cancer.
Clinical biochemistry and medical problems of studying diseases.	Clinical biochemistry in the development of problems of hereditary diseases. Mac Cusick catalog. Features of the structure of human genes and modern ideas about the types of gene mutations. Molecular basis of the pathogenesis of gene diseases and approaches to their diagnosis by molecular markers. Clinical biochemistry in the development of methods of chemotherapy, gene therapy and cell therapy. The role of clinical biochemistry in the organization of preclinical and clinical trials of new methods of treatment. Practical organization of work in a modern laboratory that performs research on clinical biochemistry (with a visit to one of these laboratories).

### Developers:

Professor of the Department of Biochemistry. Acad. Berezova T.T.

Associate Professor of the Department of Biochemistry. Acad. Berezova T.T.

Head of the Department of Biochemistry. Acad. Berezova T.T.

Kalinina E.V.

Lobaeva T.A.

Chernov N.N.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Adaptive physiology</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General concept of adaptation	Adaptation of the body (hypoxia, elevated and low ambient temperatures).
Adaptation of the circulatory system to various environmental conditions	Regulation of hemodynamics in various environmental conditions. Determination of hemodynamic functional reserves.
Adaptation of the respiratory system to various environmental conditions	Adaptive breathing capabilities.
Temperature homeostasis	The strategy of temperature adaptation.
Adaptive functions of the autonomic nervous system	The reaction of the autonomic nervous system to the action of various environmental conditions. The concept of the functional reserves of the body. Types of vegetative regulation. Reserves of the sympathetic nervous system.
Chronophysiology	Chronophysiological organization of body functions.
Integrative functions of higher nervous activity	The formation of a dynamic stereotype. Types of GNI. Storing information in the central nervous system.
Sensory systems	Adaptation of sensory systems.

**Developers:**

Associate Professor of the Department of Normal Physiology  
Professor, Department of Normal Physiology  
Head of the Department of Normal Physiology

Starshinov Yu.P.  
Severin A.E.  
Torshin V.I.

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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Biotechnology</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Introduction to modern biotechnology.	Biotechnology development vectors and medical applications Bio-object - the basis of biomedical technologies, classification, improvement.
Fundamentals of biomedical production technologies.	Features of the production of drugs by the methods of modern biotechnology.
Cell technology in medicine.	Culture of cells, organs and tissues of plants. Cultivation of organs. Animal cloning. Methods of nuclear transplantation. Cloning of mammals. Methods for preserving cell cultures.
Enzymes, as objects and means of production of drugs	Drugs based on enzymes for replacement therapy and treatment of purulent-inflammatory processes and necrosis. Enzyme preparations as biocatalysts in the pharmaceutical industry.
Vegetable producers of biologically active substances.	The main groups of biologically active substances 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 normal flora. Amino acids. Vitamins. Steroids.
Recombinant proteins and peptides.	Production of genetically engineered insulin and peptide growth factors. Recombinant interleukins, interferons, etc.
Gene therapy	Drugs based on gene therapy methods, the principle of the approach, the concept of "pathological" protein.

**Developers:**

Professor, Department of General Pharmaceutical and biomedical technology

Lukanin A.V.

Associate Professor, Department of General Pharmaceutical and biomedical technology

Samadadze T.E.

Associate Professor, Department of General Pharmaceutical and biomedical technology

Homik A.S.

Head of the Department of General Pharmaceutical and biomedical technology

Suslina S.N.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Age-specific physiology</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Physiology of the internal environment of the body.	The internal environment of the body. The value and composition of blood. The main physiological constants of blood, their dynamics in different age periods.
Age features of the circulatory system and respiration.	Age characteristics of the reaction of the cardiovascular system to physical activity. Changes in the frequency and depth of respiratory movements, vital capacity of lungs, minute volume of breathing, features of regulation of breathing at different ages
Metabolism and energy	Age features of digestion and nutrition. Metabolism and energy - as the basis of vital activity of the organism. Dynamics of energy metabolism at different stages of ontogenesis.
Physiology of the nervous system and endocrine systems. Their age features	Age features of the functioning of the spinal cord and brain, as well as the autonomic nervous system. Endocrine system and its age features. The hypothalamic-pituitary system and its role in the regulation of the activity of the endocrine glands. Puberty and menopause

**Developers:**

Associate Professor of the Department of Normal Physiology  
Head of the Department of Normal Physiology

Starshinov Yu.P.  
Torshin V.I.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Age-specific anatomy</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General anatomy of human development	1.1. Embryonic development and insertion of axial organs 1.2. The development of the body in the fetal period. 1.3. Postnatal development of the organism and its involution
Private anatomy of age restructuring systems and organs	2.1. Postnatal development of the musculoskeletal system 2.2. Postnatal development of the digestive system 2.3. Postnatal development of the respiratory system 2.4. Postnatal development of the urinary-genital organs 2.5. Postnatal development of the cardiovascular system 2.6. Postnatal development of the lymphoid system and endocrine glands 2.7. Postnatal development of the nervous system and sense organs

**Developers:**

Associate Professor of the Department of Human Anatomy  
Head of the Department of Human Anatomy

Volosok N. I.  
Kozlov V.I.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Maxillo-Facial Surgery</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Odontogenic inflammatory diseases	Anatomy and topographic anatomy of the cellular spaces of the maxillofacial region. Clinical characteristic of inflammation. Pathoanatomical and pathophysiological picture of inflammation. Definition of abscess and phlegmon. Ways of purulent infection. The method of treatment of a purulent wound of the maxillofacial area. Principles of medical treatment of acute inflammatory diseases of the maxillofacial area.
Non-fire fractures of the upper jaw, zygomatic bone, nose bones	Classification of facial fractures. Etiology, pathogenesis, assessment of the severity of damage, general post-traumatic disorders taking into account age and comorbidities. Features of emergency care for fractures of the upper jaw, zygomatic bone, nasal bones. Prevention, diagnosis and prediction of post-traumatic complications, the choice of treatment tactics, interaction with doctors of related specialties.
Non-refractory mandibular fractures	Classification of mandibular fractures, the mechanisms of their occurrence. Clinic, diagnosis and treatment of patients. The choice of treatment. Dislocation of the lower jaw, rehabilitation of patients with injuries of the lower jaw. Possible complications and principles of their prevention.
Neoplasms of maxillofacial area	Classification of maxillofacial tumors. Diagnosis, features of the course and treatment of benign and malignant tumors of the maxillofacial area. Emergency and planned care for patients with maxillofacial tumors. Principles of oncological vigilance, deontological principles of communication with patients with maxillofacial tumors. Differential diagnosis of tumors with similar pathological processes. Treatment plan for various tumor processes.
Salivary gland diseases	Methods of research of the salivary glands, methods of their evaluation. Classification, clinical presentation and treatment of sialoadenitis, salivary stone disease, salivary gland tumor lesions. 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, the algorithm for the treatment of

	diseases depending on etiopathogenesis.
Types and origin of defects. The basic principles of recovery operations in the maxillofacial region.	Causes and types of defects of the maxillofacial area. Principles of planning and carrying out recovery operations in the maxillofacial area. Indications for various types of recovery 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 area and the basic principles of rehabilitation treatment planning, the main components of rehabilitation treatment, types of rehabilitation operations and features of their implementation in the maxillofacial area, especially medical rehabilitation of patients with defects and deformities of the maxillofacial area.

**Developers:**

Associate Professor, Department of Maxillofacial Surgery  
Head of the Department of Maxillofacial Surgery

Zandelov V.L.  
Ivanov S.Yu.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program**

**31.05.01 General medicine**

<b>The name of discipline</b>	<b>Autopsy course</b>
<b>Volume of discipline</b>	<b>1 CU (36 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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 anti-epidemic rules of work in the sectional room and biopsy block. Common techniques, working with tools. Evisceration by Shore, by Virchow, cut along Leshke. 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, carrying out a sample for pneumothorax and air embolism. Abdominal cavity dissection, the study of the digestive system, opening of the retroperitoneal space.
Rules of biopsy studies.	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. Safety, clothes of a doctor. Reception of surgical material. Incisure. Processing of material in the laboratory. Urgent biopsies. Viewing of biopsy glasses. Terms of storage and rules for the issuance of sectional and biopsy-operational material (histological preparations, blocks, wet archive) and documents.
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 of the Department of Pathological Anatomy  
Head of the Department of Pathological Anatomy

Ivina AA  
Babichenko I.I.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

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

5. Sources of the Data for Evidence-Based Medicine.	<ol style="list-style-type: none"> <li>1. Uniform standards for reporting the results of randomized controlled trials.</li> <li>2. Development of clinical guidelines and guidelines.</li> <li>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.</li> </ol>
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**Developers:**

Professor of the Department of Evidence-Based Medicine  
 Professor of the Department of Evidence-Based Medicine  
 Head of the Department of Evidence-Based Medicine

Vykhristyuk OF  
 Petryaykina EE  
 Koltunov I.Ye.

*Federal State Autonomic Educational Institution of Higher Education  
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**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Endoscopic Urology</b>
<b>Volume of discipline</b>	<b>3 CU (108 HOURS)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
The history of endoscopic urology, its current state and prospects.	The history of the development of endoscopic diagnostic methods in urology. Instrumental and endoscopic methods for the study of the urological patient.
Organization of endosurgery.	Endoscopic surgery as a method of surgical treatment of diseases, with the implementation of radical interventions through pinhole tissue punctures or natural physiological holes. Requirements for the complex endoscopic operating room.
General technique of endourological procedures: Urethrocystoscopy Ureteroscopy, catheterization of the ureter KLT.	Urethrocystoscopy. Indications, contraindications, technique of performance, evaluation of results. Urethroscopy: dry and irrigation. Indications, contraindications, technique of performance, assessment of the results of KLT. Indications, contraindications, technique of performance, evaluation of results.
General technique of endourological procedures:  Nephroscopy  Lapaxia  PEPS	Nephroscopy. Indications, contraindications, technique of performance, evaluation of results. Lapaxia. Indications, contraindications, technique of performance, assessment of results. PEPS. Indications, contraindications, technique of performance, evaluation of results.
Transurethral prostate surgery.	The choice of method of anesthesia for TUPS. The organization is operating. Variants of TUPS: “pseudo-TOUR”, “partial TOUR”, “total TOUR”, “radical (subradical) TOUR”. Indications, contraindications, technique of performance, evaluation of results.
General technique endosurgical procedures.  Laparoscopic operations on the pelvic	Equipment and instruments for laparoscopic operations. Preparation of laparoscopic operating. The main stages of laparoscopic surgery in urology.  Laparoscopic adenomectomy, radical prostatectomy, cystectomy. Indications,

organs.	contraindications, technique of performance, evaluation of results.
Laparoscopic kidney surgery.	Laparoscopic nephrectomy, kidney resection, nephropexy, kidney cyst removal, retroperitoneoscopic ureterolithotomy Indications, contraindications, technique, evaluation of results.

**Developers:**

Professor of the Department of Urology and Operative Nephrology  
with a course of oncurology

Kostin A.A.

Professor of the Department of Urology and Operative Nephrology  
with the course of oncurology

Vinogradov I.V.

Head of the Department of Urology and Operative Nephrology  
with the course of oncurology

Kaprin A.D.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Reproductive health</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General issues of reproductive health of women.	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. Contraceptive methods. 2. Abortion is dangerous and safe. 3. Pregravid preparation

**Developers:**

Associate Professor at the Department of Obstetrics and Gynecology  
with a course of perinatology  
Head of the Department of Obstetrics and Gynecology  
with a course of perinatology

Lebedeva M.G.

Radzinsky V.E.

# DISCIPLINES OF THE CHOICE

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

## ANNOTATION OF ACADEMIC DISCIPLINE

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Hereditary developmental anomalies</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
General issues of human genetics and medical genetics.	Features of man as an object of genetic research. The organization of the human genome. The results of the International program "Human Genome". Mutational variability of man. Molecular mechanisms of gene mutations. Hereditary anomalies of development. Chromosomal diseases. Genetic and multifactorial diseases.
Modern methods of studying the heredity of man.	Clinical and genealogical method (pedigree method). Principles of the method, its capabilities and limitations Cytogenetic method. Principles of the method, its capabilities and limitations. Population genetic and twin methods. Principles of methods, their capabilities and limitations. Molecular genetic methods. Principles of methods, their capabilities and limitations.

### **Developers:**

Associate Professor, Department of Biology and General Genetics  
Head of the Department of Biology and General Genetics

Gigani O. B.  
Azova M.M

*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Methods for studying human heredity</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Pedigree analysis	Ppedigree analysis. Principles of the method, its capabilities and limitations. Application of the method in the analysis of monogenic traits and diseases. Application of the method to analyze the molecular basis of human multifactorial diseases.
Cytogenetic methods	Principles of the methods, their capabilities and limitations. Application of the methods for the analysis of human chromosomal pathology.
Population study	Principles of the method, its capabilities and limitations. Hardy-Weinberg low and its application in the analysis of the genetic structure of human populations. Gene polymorphisms and human multifactorial pathology.
Twin study	Principles of the method, its capabilities and limitations. Application of the method in the analysis of human multifactorial diseases.
Methods of molecular genetics	Principles of methods, their capabilities and limitations. Modern methods of analysis of human chromosomal and mitochondrial DNA. DNA restriction analysis. Molecular cloning of the human genome. Polymerase chain reaction and its application. Molecular basis of some monogenic and multifactorial human diseases.

**Developers:**

Associate Professor, Department of Biology and General Genetics  
Head of the Department of Biology and General Genetics

Gigani O. B.  
Schipkov V.P.

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«Peoples' Friendship University of Russia»*

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Introduction of the Nutritiology</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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 Nursing Activities  
Senior Lecturer of the Department of Nursing Management activities  
Head of the Department of Nursing Activities

Skalny VV  
Umnova T.N.  
Radysh I.V.

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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Molecular genetics in practical biology and medicine</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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 methods	Classical cytogenetics: karyotyping techniques. Fluorescence in situ hybridization (FISH). Comparative genomic hybridization (CGH).
Stem cells and genome 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  
Head of the Department of Biology and General Genetics

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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Introduction to the medical elementology</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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.

**Developers:**

Assistant Professor of the Department of Nursing Activities  
Senior Lecturer of the Department of Nursing Management activities  
Head of the Department of Nursing Activities

Skalny VV  
Umnova T.N.  
Radysh I.V.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Medical Enzymology</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Formation and success of medical enzymology. Chemical nature of enzymes.	<p>The subject, objectives and main directions of medical enzymology. The main chemical components of living systems. The concept of the structure of proteins.</p> <p>Amino acids are monomers of protein molecules and peptides. Proteinogenic amino acids. Classification of amino acids. Structure and physico-chemical properties of amino acids. Biologically active peptides. Structural and functional diversity of proteins.</p> <p>The structure of proteins. Monomers and oligomers. Domain structure. Site directed mutagenesis. Physico-chemical properties of proteins. Methods for studying proteins. Classification of proteins (simple and complex proteins). Connection of protein structure with their function.</p> <p>Features protein identification. Western blot.</p>
Basics of biocatalysis. Enzymology problems and evaluation of the results obtained.	<p>Basics of biocatalysis. Activation energy Chemical nature of enzymes. Features of enzymes as biocatalysts: dependence on physical and physicochemical environmental conditions (temperature, ionic strength, pH); high selectivity (substrate specificity and action specificity); sensitivity to the physicochemical parameters of various substances (inhibitors, activators).</p> <p>Differences of enzymes from inorganic catalysts. The active center, its adsorption and catalytic sites. Coenzymes - the concept of their functional role and chemical diversity. The theory of induced correspondence of the active center to the structure of the substrate. Allosteric centers, their regulatory functions.</p> <p>Classification and nomenclature of enzymes.</p> <p>The activity of enzymes, its units of measurement. Units of measurement of the amount of enzymes. Molecular and specific activity of the enzyme.</p> <p>Kinetics of enzymatic catalysis. The Michaelis – Menten equation.</p> <p>Regulation of enzymatic activity: fast and slow ways to implement it. Enzyme inhibitors: irreversible and reversible; competitive and noncompetitive (allosteric). The use of</p>

	inhibitors in medicine and in everyday life. Reversible inhibition of 25 enzymes as the mechanism of action of most drugs. Retro inhibition.
Enzyme therapy.	Isozymes, their role in enzymodiagnosics. Immobilized enzymes. Coenzymes - derivatives of vitamins. The functional role of coenzymes. Enzymotherapy of tumors. The role of glutathione and glutathione-dependent enzymes in the redox-dependent mechanisms of the formation of drug resistance of tumor cells. Redox-dependent regulation of tumor cell death mechanisms.
Enzymodiagnosis.	Catabolism of amino acids: (transamination of amino acids, deamination of amino acids; (direct and indirect), decarboxylation of amino acids, hydroxylation of amino acids). Specific metabolic pathways of individual amino acids. The diagnosis of the disease when determining the activity of enzymes in biological fluids. Polyamine exchange as a therapeutic target. Reactive oxygen species and antioxidant system. Regulation of cellular redox status in health and disease.
Enzymes-analytical reagents	Enzymes as analytical reagents in clinical biochemistry.

**Developers:**

Professor of the Department of Biochemistry. Acad. Berezova T.T.

Kalinina E.V.

Associate Professor of the Department of Biochemistry. Acad. Berezova T.T.

Lobaeva T.A.

Professor of the Department of Biochemistry. Acad. Berezova T.T.

Chernov N.N.

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Tracheotomy in modern otorhinolaryngology</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Anatomy and physiology of the larynx. Methods of examination of the larynx.	Clinical anatomy and physiology of the larynx. Methods of larynx examination: external examination, laryngoscopy (indirect, direct). X-ray examination of the larynx, CT, MRI. Methods of functional examination of the larynx (study of the voice function of the larynx, acoustic analysis of the voice). Stroboscopy of the larynx, rheography, vibrometry of the larynx.
Pathology of the larynx. Tracheotomy.	Sensations of laryngeal sensitivity. Movement disorders of the larynx. Acute stenosis of the larynx. Chronic laryngeal stenosis. Tracheotomy. Tumor-like laryngeal formations. Benign tumors of the larynx. Malignant tumors of the larynx.

**Developers:**

Associate Professor of the Department of Otorhinolaryngology  
Head of the Department of Otorhinolaryngology

Korshunova I.A.  
Popadyuk V.I.

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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Telemedicine</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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. Nowadays' developments of leading manufacturers for telemedicine.

**Developers:**

Associate Professor of the Department of Medical Informatics  
Senior Lecturer of the Department of Medical Informatics  
Head of the Department of Medical Informatics

Lukyanova E.A.  
Lyapunova T.V.  
Stolyar V.L.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Topical issues of neonatology (optional)</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Perinatal asphyxia, hypoxic-ischemic encephalopathy and their consequences. Birth injury.	Perinatal asphyxia, hypoxic-ischemic encephalopathy and their consequences. Etiology. Pathogenesis. Criteria for diagnosis. Classification. Apgar scale. Clinical picture. Hypoxic-ischemic encephalopathy (HIE). Sarnat classification. Lesions of internal organs with asphyxia of newborns (meconium aspiration syndrome, persistent pulmonary hypertension, necrotizing enterocolitis, acute renal damage). Features of hypoxic damage to the brain in prematurity (intraventricular hemorrhage, periventricular leukomalacia). Therapy. Primary resuscitation of newborns. Prognosis. Consequences of HIE. Cerebral palsy. Attention Deficit Hyperactivity Disorder. Birth injury. Etiology. Pathogenesis. Birth trauma of the skin and subcutaneous fat, musculoskeletal system, internal organs, central (brain, spinal cord) and peripheral nervous system. Types of intracranial hemorrhage. Diagnostics. Therapy. Prevention. Prognosis. Consequences of perinatal lesions of the nervous system of traumatic origin.
Respiratory diseases in newborns.	Respiratory distress syndrome of newborns. Bronchopulmonary dysplasia (BPD). Congenital pneumonia. Apnea. Causes. Frequency. Etiology. Classification. Pathogenesis. Clinical picture. Diagnostic criteria. Differential diagnostics. Therapy. Prevention.
Localized purulent-inflammatory diseases of newborns. Skin diseases of newborns.	Clinical forms of localized infections (skin and subcutaneous fat infections, omphalitis, osteomyelitis, arthritis, conjunctivitis). Predisposing factors. Etiology. Epidemiology. Classification. Pathogenesis. Clinical picture. Diagnostics. Diagnostic criteria. Therapy. Prognosis. Prevention. Diaper dermatitis. Seborrheic dermatitis. Etiology. Classification. Pathogenesis. Clinical picture. Diagnostics and differential diagnostics. Therapy. Prevention. Prognosis.

**Developers:**

Associate Professor of the Department of Pediatrics  
Head of the Department of Pediatrics

Kantimirova M.G.  
Ovsyannikov D.Yu.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Basics of Nutrition Childhood</b>
<b>Volume of discipline</b>	<b>2 CU (72 hours)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
Nutrition of healthy baby	<p>Definitions concerning feeding children. Principles of nutrition of children. Properties and composition of female breast milk. The benefits of breastfeeding. The value of nutrition in the first year of life for the subsequent human health.</p> <p>Physiology of lactation. Actions and methods that help and prevent breastfeeding. Breast feeding technique. Principles of support for (successful) breastfeeding in the WHO Friendly Baby Hospital program. Breastfeeding counseling. Contraindications to breastfeeding and early breastfeeding of the child. Causes, signs, prevention and treatment of hypogalactia. Definition, causes, rules and timing of the introduction of complementary foods. Principles of artificial and mixed feeding.</p> <p>Principles of adaptation of milk formulas. Classification of infant formula. Nutrition of children over the age of a year.</p>
Hypotrophy. Protein and energy deficiency. Intrauterine growth retardation	<p>Kwashiorkor. Alimentary insanity. Malabsorption. Paratrophy. Etiology. Pathogenesis. Classification. Clinical picture. Diagnostics. Therapy. Forecast. Prevention. Long-term consequences.</p>
Disorders of the metabolism of vitamins. Hypo- and hypervitaminosis	<p>Rickets. Hypervitaminosis D. Etiology. Pathogenesis. Classification. Clinical picture. Diagnostics. Therapy. Forecast. Prevention. Long-term consequences.</p>

**Developers:**

Associate Professor of the Department of Pediatrics  
Head of the Department of Pediatrics

Kantimirova M.G.  
Ovsyannikov D.Yu.

**Medical Faculty**

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	<b>Outpatient Cardiology</b>
<b>Volume of discipline</b>	<b>2 CU (72 h)</b>
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
1. Characteristics of the main cardiovascular agents.	<p>1. ACE inhibitors. General characteristics and place in therapy. Classification of ACE inhibitors. Features of use of some preparations. Complications and limitations to use.</p> <p>2. Sartans. Sakibuthril / valsartan.</p> <p>3. Beta-blockers. Characteristics of the group. Cautions and complications of beta-blocker therapy.</p> <p>4. Nitrates. Characteristics of nitrates. Place nitrates in therapy. Complications and cautions when using. Nicorandil.</p> <p>5. Calcium channel blockers (BCC). Dihydropyridine BCC. Complications with dihydropyridines. Pulse-thinning BPC.</p> <p>6. Alpha-1-adrenoblockers</p> <p>7. Diuretics. Loop diuretics. Thiazides and similar diuretics. Antagonists of aldosterone. Potassium-sparing diuretics. Inhibitors of carbonic anhydrase.</p> <p>8. Antihypertensive drugs of central action.</p> <p>9. Cardiac glycosides. Mechanism of action and effects. Place in modern therapy. Complications and contraindications for use</p> <p>10. Antiarrhythmic drugs (AAP). AARP IA class. AARP IB class. AAS class IC. AARP class II. AARP class III. AARP class IV. Other AARPs.</p> <p>11. Antithrombotic agents. Antiaggregants, anticoagulants.</p> <p>12. Lipid-lowering drugs. Statins. Fibrates. Ezetimibe. A nicotinic acid. Final interview on the section.</p>

<p>2. Rational pharmacotherapy of cardiovascular diseases in outpatient practice.</p>	<p>1. Arterial hypertension (AH). General issues. Rational pharmacotherapy. AH in pregnancy and lactation. Resistant hypertension. Pulmonary hypertension. Pharmacotherapy of hypertensive crises.  2. Ischemic heart disease (CHD). Angina pectoris. General issues. Rational pharmacotherapy of angina pectoris. Variable angina pectoris (Prinzmetal angina). Microvascular angina pectoris (syndrome X).  3. Chronic heart failure (CHF). General issues. Rational pharmacotherapy.  4. 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.</p>
<p>3. Some features of outpatient management of cardiac patients</p>	<p>1. Indications for consultation of a cardiologist and necessary studies before consultation.  2. AH, angina of tension, CHF.  3. Atrial fibrillation. Atrial flutter.  4. Other rhythm disturbances.  5. Postponed myocardial infarction, coronary angioplasty, aorto-coronary bypass. Final interview on the section. Final interview on discipline.</p>

**Developers:**

Assistant professor of the Department of General Practice  
Assistant professor of the Department of General Practice  
Head of the Department of General Practice

G.N. Kobilyanu  
A.V. Syrov  
A.V.Filimonyuk

*Federal State Autonomic Educational Institution of Higher Education  
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*Medical Faculty*

**ANNOTATION OF ACADEMIC DISCIPLINE**

**Educational program  
31.05.01 General medicine**

<b>The name of discipline</b>	Temporary Disability Examination
<b>Volume of discipline</b>	2 CU (72 h)
<b>Course Description</b>	
<b>Topics</b>	<b>Content of topics</b>
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:**

Assistant professor of the Department of General Practice  
Head of the Department of General Practice

E.I. Rusanova  
A.V.Filimonyuk

**Head of program**



**Radyshev I.V.**