

## **Analytical chemistry**

The general educational course "Analytical Chemistry" is designed for second year students. The subject of the discipline is mastering the theory and practice of methods of qualitative and quantitative chemical analysis.

The course is based on the knowledge and skills in the following disciplines: General and Inorganic chemistry, Physics and Math Statistics. It requires the ability of student to perform mathematical calculations, knowing of the basics of chemical thermodynamics and kinetics, the chemistry of solutions, the acid-base and redox properties of substances, to make up the equations of ion exchange and redox reactions, to solve problems on calculations the reaction equation and solutions, master the basics of working in a chemical laboratory, including occupational safety when working in a chemical laboratory.

### **Цель:**

The goal of the discipline is to give students knowledge of basic concepts of analytical chemistry, acquaintance with methods of qualitative and quantitative analyzes, as well as modern physical-chemical methods.

### **Задачи:**

The main tasks of the course are:

- To teach students physical-chemical principles of basic analytical processes.
- To teach students selecting an appropriate analytical method suitable for real sample.
- To teach students treatment and estimation of analytical experiment data.
- To give students basic skills of analytical technics, widely using in any modern laboratory.

## **Biochemistry**

The discipline provides students with fundamental knowledge and modern ideas about the structure and properties of biomolecules, about the basic biochemical processes underlying the functioning of living systems.

### **Цель:**

Acquisition of knowledge about the structure and properties of chemical compounds that make up living organisms, about the basic laws of biochemical processes and mechanisms of regulation of metabolism. Formation of understanding of molecular principles of transmission of hereditary information. Training in practical methods and skills of working in a biochemical laboratory with biological objects.

### **Задачи:**

1. consider the theoretical foundations, as well as the problems, successes and achievements of modern biochemistry;
2. to study the molecular, as well as structural and functional features and physico-chemical properties of various classes of chemical compounds necessary for the functioning of living systems;
3. to introduce students to various methods of qualitative and quantitative analysis used in biological chemistry.
4. contribute to the formation. natural science worldview for understanding and analyzing phenomena and processes occurring in wildlife.

### **Требования к уровню освоения содержания:**

Students must have organic, inorganic chemistry, chemistry of high molecular compounds, fundamentals of colloidal and physical chemistry. Also, students must have the skills to work in a chemical laboratory

## **Biology**

Discipline aimed at creating general cultural competence and professional competencies graduate. In the discipline considers the basic theory of biology (cell, chromosome, and evolutionary), metabolism, ontogeny, heredity and variation, biological diversity and its protection, human origins and the relationship of social and biological in its evolution.

Discipline program provides current control in the form of written tests.

Certification on mastering the content of the discipline is carried out in the form of set-off.

### **Цель:**

Objectives of the discipline are:

- to systematize and improve knowledge on the most fundamental concepts of biology
- to improve terminology level in argumentation in professional area

### **Задачи:**

In order to complete the course student have to:

- study fundamental concepts of biology, such as molecular biology, evolution theory and concept of the biosphere
- explore methods of studying of biodiversity
- recall knowledge on the origin of life and basics of biochemistry

## **Botany**

### **Аннотация:**

The content of the discipline covers a range of problems related to the study of macro- and microstructures, ontogenesis, diversity, origin and classification of fungi, algae and higher plants, their participation and role in ecosystems and human activity. The study of theoretical material is complemented by the knowledge gained in the course of laboratory work.

### **Цель:**

Formation of system of knowledge about fungi, algae and higher plants, their structure, classification, origin and role in Earth's ecosystems.

### **Задачи:**

- the formation of knowledge about the plant as a whole organism, its macro- and microstructure, changes in the course of ontogenesis and phylogenesis;
- gaining knowledge about the diversity, functioning, origin of fungi, algae and higher plants, their participation and role in ecosystems and human activities;
- analysis and discussion of different views on the position of plants and fungi in modern systems of the organic world.

## Chemistry of biogenic elements

### Аннотация:

All living organisms, their tissues and organs contain different quantities of all known chemical elements. The role of chemical elements in the organism is many-sided. 96% of the human body is made up of four p-block elements – organogens: carbon, oxygen, hydrogen, and nitrogen. There is a great content of sodium, potassium, calcium, phosphorus, sulfur, etc. in the human organism. Microelements represented by d-block elements are in the composition of enzymes, hormones, vitamins and other biologically active substances which participate in reproduction, growth, and metabolism processes. Studying of properties of chemical elements, their role in vital activity is necessary for a future physician for better understanding the normal and pathological processes taking place in the human organism.

The main task of teaching the course is to study the chemistry of elements, their most important compounds used in science, technology and everyday life. Particular attention is paid to the periodic law of Mendeleev - the base for learning and teaching of modern inorganic chemistry and all the natural sciences, the basic laws of chemical processes, chemistry of aqueous solutions and redox reactions.

### Цель:

The main objective of the proposed course is the formation of creative chemical thinking of students, which will be used to solve chemical problems associated with the specialty and will be transferred to professional activities. The student should have an idea about the structure and properties of the basic compounds of each element of the periodic system.

### Задачи:

1. Understand the main chemical classes of inorganic compounds, genetic interrelation substances
2. Understand the processes in which chemical compounds can take part (exchangeable, redox, complexation processes)
3. To know the processes occurring with substances in solutions
4. Have an idea of the internal structure of matter, the stereochemistry of molecules
5. Have an idea about the more complex chemical systems, environmental interactions
6. Be able to identify substances (open ions)
7. To acquire the skill of experimental work
8. Have an idea about electrochemical processes
9. Have an idea about the patterns of chemical processes

## **Clinical Pharmacology**

### **Аннотация:**

The content of the discipline is due to cardinal changes in the concepts of the use of certain groups of medicines in clinical practice and the increasing role of specialists in the system of pharmaceutical care to the population. The content of the discipline includes the issues of reasonable clinical use of various groups of drugs in the treatment of diseases based on the principles of evidence-based medicine and within the framework of the concept of rational use of medicines formulated by WHO.

### **Цель:**

Study and substantiation of the principles of inclusion of drugs of various pharmacological groups in pharmacotherapeutic schemes and algorithms for the treatment of pathologies. Expanding the understanding of the clinical use of medicines depending on therapeutic tasks. Formation of skills of independent substantiation of drug therapy in specific pathological conditions, based on the evidence base and an adequate assessment of the risk-benefit ratio.

### **Задачи:**

The discipline is designed to form skills in the use and interpretation of research materials on the clinical use of medicines in various diseases, skills in assessing the degree of reliability and level of evidence of information obtained during research on the use of drugs in the clinic, skills in the practical use of evidence-based medicine in terms of the use of drugs for conducting information and consulting activities in the professional community and within the framework of informing the population about the rational use of medicines.

## **Disaster Medicine**

This single interdisciplinary program includes the issues of disaster medicine and the medical service of civil defense, the execution of which allows more effectively prepare graduates to work on the organization and provision of emergency medical care to affected on a mass scale in emergency situations (ES) of war and peace time.

This program is built in accordance with the requirements of THE state HPE.

The main semantic load of the discipline is to provide students with basic knowledge on the organization of medical support of the population and the organization of medical supply units and institutions of the service of disaster medicine in emergency situations of peace and war.

The development of discipline contributes to the preparation of students for the practical implementation of functional duties in accordance with the profile of training on the organization of medical supply institutions and units of the service of disaster medicine and drug supply of the population in emergency situations of peace and war. To acquaint students with the organization and planning of civil defense activities in pharmacies, with ways to improve the sustainability of pharmacies in extreme emergency situations.

Discipline involves the study of:

- bases of the organization and tasks of the State system for the prevention and actions of emergency situations, the all-Russian service of medicine of accidents and Federal service of medical service of civil defense;
- methods and means of protection of the personnel of pharmaceutical institutions, the population and medical property at natural disasters, industrial accidents and catastrophes, and also from influence of the damaging factors of modern means of defeat;
- order of action on signals of the notification of bodies of civil defense and emergency situations;
- fundamentals of sustainable operation of pharmacies in emergency situations of peace and war;
- features of work of drugstores in areas of natural disasters, accidents and catastrophes, in zones of radioactive and chemical pollution and in the centers of defeat;
- actions for medical supply of organizations and formations of service of medicine of accidents and drug supply of the population.

### **Цель:**

The main purpose of the UMK development discipline " disaster Medicine "is the formation of a culture of safety, readiness and ability of graduates in the specialty" pharmacy "and"Technogenic safety" to work in emergency situations of peace and war.

### **Задачи:**

The main objective of the training course is to prepare graduates for the practical implementation of duties to provide medical assistance to victims in emergency and dangerous situations of peacetime

Main task:

formation of students ' necessary theoretical base in the field of life safety;

familiarization with the conceptual apparatus and terminology in the field of life safety;

education of students ' worldview and culture of safe behavior and activity in different conditions.

the formation of educators of the needs, motivations, habits healthy lifestyles;

formation of personal-value attitude to their own health, the environment, of which man is a part.

The acquired knowledge and skills will allow future teachers to master and develop new pedagogical technologies that can improve the efficiency of educational work on the basis of health-saving technology in the educational field.

## **Ecology**

### **Аннотация:**

В курсе рассматриваются основные понятия, правила, законы и модели экологии и научные основы рационального природопользования. Определяются предмет, принципы и структура экологии. Излагаются основы аутоэкологии, экологии популяций, синэкологии и учения о биосфере. Вводятся основные понятия и термины, используемые при формировании научной основы рационального природопользования.

The basic concepts, rules, laws and models of ecology and the scientific foundations of environmental management are examined in the course. The subject, principles and structure of ecology are determined. The fundamentals of autoecology, population ecology, synecology, and the biosphere theory are outlined. The basic concepts and terms used in the formation of the scientific basis for rational nature management are introduced.

Discipline program provides current control in the form of written tests.

Certification on mastering the content of the discipline is carried out in the form of set-off. Total labor discipline is 3 credit units, 108 hours.

Discipline program includes lectures (28 hours) and practical (14 hours) classes and 66 hours of independent work of students on full-time education.

### **Цель:**

The purpose of the discipline is the formation of knowledge about the fundamental laws necessary for making optimal decisions in the context of an environmental crisis; elucidation of the ecological approach peculiarities to cognition of the biosphere based on the combination of biological concepts with the concepts, methods and laws of other natural sciences; practical application of this integrated science discipline in solving problems of the natural sciences.

### **Задачи:**

1. Formation of knowledge about the basic terms, concepts and models of general ecology.
2. Formation of knowledge about the scientific principles of nature; measures to improve the quality of the environment, environmental management and the basics of environmental law.
3. Formation of ideas about the relationship and interdependence of phenomena occurring both in the biosphere and in the society-nature system.
4. Formation of ideas about modern problems of anthropogenic changes in the natural environment and ways of rational use of natural resources and their protection.
5. Formation of skills of understanding, presentation and critical analysis of basic information in the field of ecology and environmental management.
6. Formation of the skill of correct application of basic concepts of environmental management (cadastre, environmental monitoring, environmental risk assessment, rationing of environmental quality, environmental damage, environmental certification, examination) in practice.



## **Economics**

### **Аннотация:**

The purpose of the discipline is to form general cultural and professional competencies such as:

- understand the patterns of development of the economic system of society, focus on these patterns in professional activities;
- the ability to use the basics of economic knowledge in various fields of activity;
- know the behavior patterns of economic agents and markets.

Selected competencies allowed to formulate the purpose and objectives of the discipline.

The purpose of studying the discipline is:

- to study the basic laws and laws of the functioning of economic systems through the formation of framework of categories and concepts and through the accumulation of complex of knowledge, skills and abilities of various levels of analyzes and generalizations.

The main objectives of the discipline include:

- to form the basis of framework of categories and concepts
- to determine the subjective and objective factors influencing economic processes;
- to develop skills for the derivation of general economic laws and patterns of functioning of socio-economic systems in various countries;
- to present the features of the functioning of multi-level economic development management systems at various stages, in specific socio-economic conditions;
- to promote the development of skills for assessing the effectiveness of economic processes managing based on a system of micro and macroeconomic indicators

The subject of the discipline are the following objects:

- economic system
- resource market;
- the market for goods and services;
- national economy.

### **Цель:**

The purpose of studying the discipline is:

- to study the basic laws and laws of the functioning of economic systems through the formation of framework of categories and concepts and through the accumulation of complex of knowledge, skills and abilities of various levels of analyzes and generalizations.

### **Задачи:**

The main objectives of the discipline include:

- to form the basis of framework of categories and concepts
- to determine the subjective and objective factors influencing economic processes;
- to develop skills for the derivation of general economic laws and patterns of functioning of socio-economic systems in various countries;
- to present the features of the functioning of multi-level economic development management systems at various stages, in specific socio-economic conditions;
- to promote the development of skills for assessing the effectiveness of economic processes managing based on a system of micro and macroeconomic indicators

## **General Chemistry**

### **Аннотация:**

The course of General Chemistry is the basis of all other branches of Chemistry Science. The special attention is paid to the following topics: Atomic Structure, Chemical Bonding, Periodicity, Data and Measurements, Stoichiometry and some other which form the scientific understanding of substances and their properties. The behaviour of the compounds in aqueous solutions and principles of RedOx processes are considered in this course also.

Successful mastering of this course helps students to develop their knowledges in Unorganic Chemistry, Organic Chemistry, Analytical Chemistry, Physical Chemistry and other fields.

### **Цель:**

The main target of this course is the formation of basic knowledges about the structure of substances and principles of their transformations.

### **Задачи:**

1. Improving and systematisation of basic knowledges in chemistry
2. Formation of scientific way of understanding of main chemical processes
3. Preparation of students for the future studying of more narrow branches of chemistry

## **History of Pharmacy and Medicine**

### **Аннотация:**

The discipline "History of Pharmacy and Medicine" ensures the formation of students' general cultural competencies about the patterns and evolution of knowledge about medical drugs, methods of using them in treating patients and for preventive purposes, evolving forms and organizing the activities of doctors and pharmacists in close connection with the development of medicine, medicine and medical activities of the peoples of the world throughout the history of mankind.

### **Цель:**

Formation of special medical knowledge of students, expanding their medical horizons and the level of understanding of the basic laws of the world-historical process of the formation and development of medicine and pharmacy from ancient times to the present.

### **Задачи:**

The objectives of the discipline are:

- to teach students to objectively analyze historical phenomena, achievements and prospects for the development of pharmacy as a science, pharmacy and pharmacy, pharmaceutical industries;
- show the general patterns of the world-historical process of the formation and development of pharmacology, medicine and medicine in various countries of the world from ancient times to our time;
- to reveal the achievements of outstanding civilizations and each era in the field of pharmacology and medicine in the context of the progressive development of mankind;
- show the interaction of national and international factors in the formation of pharmaceutical science and practice in different regions of the globe;
- to acquaint students with the life of outstanding scientists and doctors of the world who determined the fate of pharmaceutical science and medical practice;
- to reveal the ethical principles of pharmaceutical and medical activity, to show the philosophical foundations and historical conditions of their formation;
- to bring up high moral qualities in students: love for their profession, loyalty to duty, feelings of humanism and patriotism;
- to expand the general scientific and cultural horizons of students.

## **Industrial Medicine Technology**

### **Аннотация:**

The discipline provides a systematic view of the production and characteristics of the main dosage forms of drugs: solid, liquid and soft.

Industrial technology of drugs is the science of the theoretical foundations and production processes of processing of drugs into drugs by giving them a certain form on the basis of established physical, chemical, mechanical and other laws.

Industrial technology deals with large-scale production, which is produced by mechanized pharmaceutical enterprises, factories and factories.

Sections in the program are allocated as individual, but the study of individual sections is provided in accordance with the logical sequence of studying the topics of the discipline as the demand of a process in the technology of specific dosage forms. Industrial technology is the main subject, which ultimately forms a specialist with higher education pharmacist in the specialty "Pharmacy".

### **Цель:**

Formation of systemic knowledge, skills and abilities in the development, manufacture, production, quality assessment, storage conditions, packaging, labeling of medicines.

### **Задачи:**

The objectives of the development of the discipline "Industrial Medicine Technology" are:

- Formation of system knowledge about existing (traditional) methods of production of dosage forms;
- Study of theoretical bases of compositions and methods of production (modification) of traditional dosage forms;
- Study of methods of manufacturing dosage forms based on the development of the theory and use of achievements of related Sciences;
- Developing an understanding of drug delivery systems to organs and tissues that would be able to provide optimal pharmacological effect, directed transport, controlled release, minimal side effects and ease of use;
- Formation at students of practical knowledge on production and standardization of medicines in industrial conditions, skills of drawing up the main sections of standard documentation on ready medicines.

## **Informatics**

The academic subject “Informatics” in the educational programs of bachelors and specialists mainly performs the functions of general developmental and general educational and does not include studies of professional information technologies connected with concrete training direction of students. The subject includes the theoretical foundations of informatics and information technology; information modeling; technologies and software for preparing text documents, processing numerical data, working with databases; elements of algorithmization and programming; network technologies and Internet technologies; social and juridical aspects of informatization; information security issues.

### **Цель:**

Formation of knowledge and skills in the field of computer science and information technology; creating a basis for using IT in the process of studying various subjects of the curriculum including professional cycle subjects.

### **Задачи:**

Specific objectives of course are as follows:

1. formation of ideas about Computer Science and Information Technologies, their place in the modern world;
2. formation of ideas about information as an fundamental concept, its measurement and encoding, principles of its presentation in a computer and processing;
3. formation of ideas about information modeling as cognition method;
4. to acquaint students with the basics of modern information technologies, their development trends;
5. deepening the skills of general-purpose information technologies (creating and processing text, table, graphic and multimedia objects, data storage and retrieval);
6. to acquaint students with the basic technical, software and organizational methods to protect information when working with information systems;
7. to acquaint students to the legislation on the legal regulation of relations in the field of information in the Russian Federation.

## **Latin language**

### **Аннотация:**

Целью дисциплины латинский язык является научение переводу и составлению текстов фармацевтического содержания. В первой части УМК изложена информация по фонетике и морфологии латинского языка. Во второй части изложена информация по синтаксису латинского языка и по фармацевтической терминологии.

The aim of the discipline Latin is to teach the translation and drafting of texts of pharmaceutical content.

The first part of the UMK contains information on phonetics and morphology of the Latin language. The second part provides information on the syntax of the Latin language and pharmaceutical terminology.

### **Цель:**

1. learn Latin terminology;
2. to master the basic skills of reading and translating Latin texts with pharmaceutical theme.

### **Задачи:**

1. get an idea of the grammatical structure of the Latin language;
2. know by heart the words that make up the lexical minimum (500 units) and 25 catch phrases;
3. learn to read and translate Latin pharmaceutical texts of medium complexity correctly and fluently with a dictionary;
4. to be able to apply the acquired knowledge in professional activities.

## **Law**

In this course foreign students will learn the basics of Russian law. Specifically they will study topics such as basics of Russian law and state, basics of civil law of Russia as one of the most important and basic branches of law, basics of labor law of Russia, basics of work with information (some parts of information law of Russia) and basics of legal liability according to the Russian law.

In the end of the course students should be able to understand what law is, how it functions, what is Russia as a state, what are the basics of Russian law. Students will learn the basic legal relationships that they enter into every day while they are in Russia, and also they will learn about legal employment opportunities. Students will understand specific features of their legal status as foreigners in Russia and specific features of legal status of student in Russia. Also they will learn about law enforcement agencies of Russia and especially those to which they may apply.

### **Цель:**

Obtaining knowledge in the field of Russian law and legislation for solving issues in various fields of cultural, professional and scientific activities.

### **Задачи:**

To promote learning about the fundamentals of law in general, but mainly about the fundamentals of Russian law and the state; to form understanding of the sectoral system of Russian law; to promote obtaining of basic knowledge in the field of civil law of the Russian Federation, labor law of the Russian Federation, in particular, the employment of foreign citizens in the Russian Federation, as well as to promote the development of basic knowledge in the field of working with information. To form the ability to carry out an elementary analysis of the norms of Russian law and identify an action as an offense, as well as determine the type of legal liability for an offense.

## **Logics**

### **Аннотация:**

The course "Logics" is aimed at mastering the basic concepts of logic, techniques and methods, rules and laws of rational thinking. Students get acquainted with the nature and specifics of logical knowledge. The content of the course includes logical analysis of natural language, classical logic statements. Particular attention is paid to the analysis of forms of thinking - concept, judgment and inference, such logical procedures as deductive reasoning, the formation of concepts and operations on them, definition, induction, analogy, as well as methods of argumentation, proof and refutation.

### **Цель:**

The purpose of the discipline: to develop the skills of analytical thinking, based on the ability to analyze from the standpoint of logical correctness of their own reasoning and reasoning of the opponent, both mental content and written.

### **Задачи:**

Tasks of studying the discipline:

- to form students' understanding of the forms and laws of logical thinking, to explain to them the methodology of a formal-logical solution of the most typical scientific and practical problems;
- to teach future specialists to consciously use the initial principles of logical correct thinking, when creating skills to form a harmonious and convincing thought.



## **Management**

### **Аннотация:**

The course outlines the requirements to the students' knowledge and skills in the sphere of the best practice of management in modern corporations, as well as course content, activities and assessment. It includes the main aspects of theoretical and methodological basis of management of social and economic systems, the organization as the object of social management, the structure of functions of management and the nature of management decisions.

The course combines lectures and interactive seminars to promote students critical thinking and problem-solving skills. The syllabus includes individual and group work.

The course is intended for the students completing the undergraduate degree 04.03.01 Chemistry, undergraduate program "Pharmacy". The syllabus is developed in accordance with the Federal State Educational Standard for the undergraduate degree 38.03.02 "Management".

### **Цель:**

The course is designed to provide students a wide overview of the nature and subject of management. The goal is to provide students with the fundamental knowledge of the nature, principles and theories of the science of management as well as basic skills in decision-making.

Topics include management history and theory, the changing business environment (internal and external), strategic planning, organization and communications, motivation, control, leadership and decision-making. Students will also examine behavioral and organizational dynamics of managerial practice and the challenging roles of managers at different levels of corporations (line, mid-level, top, executives).

### **Задачи:**

Objectives of the course:

- to learn main periods in the development of management as an academic discipline and as a field of practice;
- to understand main business processes in organizations;
- to understand ethical challenges in contemporary business environments;
- to research a variety of approaches to strategic planning and goal-setting;
- to analyze internal and external organizational environment, to identify its key elements and influence on the functioning of the organization;
- to learn different types of organizations structures and ways of communications;
- to analyze communication processes in the organization and strategies for their improvement;
- to understand the role of the control process;
- to learn techniques for leading and motivating individuals and teams;
- to outline practices of effective decision-making.

## **Management and Economics of Pharmacy**

### **Аннотация:**

Management and economics of pharmacy is a mandatory and leading link in the system of special disciplines of the pharmaceutical profile, providing professional training of the future pharmacist. Pharmacy management and Economics is a scientific discipline that studies the organization, management and economics of pharmaceutical business, during which students will be able to gain skills in working with regulatory legal documents in the pharmaceutical field, learn how to organize the work of wholesale and retail pharmaceutical enterprises from the standpoint of pharmaceutical management and marketing, will be able to conduct economic and financial analysis of the results of activities, and also to be guided in accounting issues of indicators of financial and economic activity of pharmaceutical organizations. The acquisition of a set of these knowledge, skills and possessions increases the value of a graduate of this field of study in the eyes of employers.

### **Цель:**

To form students' necessary professional competencies for solving organizational, managerial and economic problems in the conditions of market circulation of medicines on the basis of current legislation, modern information technologies, as well as education of personal qualities of a future specialist

### **Задачи:**

In order to achieve this goal, the student must acquire knowledge and skills in managing the work of pharmaceutical organizations and institutions, including:

- licensing of pharmaceutical activities;
- work on the sale of medicines and other pharmacy products;
- trade and procurement activities in order to ensure the profitability of enterprises, taking into account the development of market relations;
- application of the current legislation regulating the issues of state regulation of relations arising in the field of circulation of medicines;
- operational accounting of the movement of pharmacy assortment goods;
- the main elements of marketing in the implementation of financial and economic activities;
- new information technologies for solving professional tasks;
- principles of managerial decision-making on personnel management, organization of pharmaceutical workers' work, professional development of employees, control over admission to work with narcotic and psychotropic substances and other issues of pharmaceutical activity.

## **Mathematics**

### **Аннотация:**

Дисциплина "Математика" предназначена для освоения базовых понятий линейной алгебры и математического анализа.

The discipline "Mathematics" is intended for mastering the basic concepts of linear algebra and mathematical analysis.

### **Цель:**

To form ideas about the most important concepts of mathematics, mathematical models and mathematical methods used in the social, humanitarian, legal and medical-pharmaceutical sciences.

### **Задачи:**

To achieve these goals it is necessary to solve the following tasks:

- to form ideas about the role and place of mathematics in world culture;
- to form an understanding of the importance of mathematics in different sciences;
- to acquaint with examples of the application of concepts and methods of linear algebra and mathematical analysis in social, humanitarian, legal, medical-pharmaceutical and another sciences.;
- to form skills and abilities for usage of mathematical tools in a future professional activity of students of highlighted training directions and specialties.

## **Microbiology and Virology**

The course aims to provide knowledge on the role and properties of microorganisms, their distribution and impact on human health, applications in biotechnology and environmental protection. Special topics include microbial genomics and bioinformatics, molecular aspects of cell-cell and cell-environment interactions, antibiotic resistance and synthesis of bioactive compounds.

On successful completion of this course, the student will be able to:

- 1) describe the main stages of microbiology development and its correlation with other biological disciplines;
- 2) identify appropriate techniques for assessing the structural and functional diversity of microorganisms, to study their physiology and biochemistry;
- 3) define the roles of microbes as commensals and pathogens and mechanisms by which they interact with the host and environment;
- 4) consider currently topical and newly emerging aspects of microbial genetics and biotechnology;
- 5) define structural and functional organization of viral particles, main principles of protective immunity, vaccines and antiviral treatment;
- 6) work in laboratory with pure cultures of bacteria.

### **Цель:**

The course aims to provide knowledge on the role and properties of microorganisms, their distribution and impact on human health, applications in biotechnology and environmental protection. Special topics include microbial genomics and bioinformatics, molecular aspects of cell-cell and cell-environment interactions, antibiotic resistance and synthesis of bioactive compounds.

### **Задачи:**

To provide knowledge on the role and properties of microorganisms, their distribution and impact on human health;  
to acquaint with the main stages of microbiology development and its correlation with other biological disciplines;  
to identify appropriate techniques for assessing the structural and functional diversity of microorganisms;  
to acquaint with the modern trends in microbial genetics, genomics and bioinformatics;  
to inform about the applications of microorganisms in biotechnology and environmental protection;  
to teach laboratory skills of working with pure cultures of bacteria.

## Organic Chemistry

### **Аннотация:**

The discipline "Organic Chemistry" covers the fundamental principles and methods of organic chemistry. During the course, students study the structure, properties, and synthesis methods of organic compounds. Special attention is paid to the most important classes of organic compounds, such as hydrocarbons, amino acids, carbonyl compounds, as well as biomolecules such as proteins, lipids, and nucleic acids. The course also includes the study of reaction mechanisms and methods for analyzing organic compounds.

Organic chemistry creates a theoretical and practical foundation for the work of a specialist in such extremely important technological sectors as basic organic synthesis, fine organic synthesis, petrochemistry, polymers, the pharmaceutical industry, medicine, agriculture, etc.

### **Цель:**

The goal of the course is knowing by students a science of organic chemistry, the object of study of which are carbon compounds with organogenic elements, their structure, properties and methods of synthesis.

### **Задачи:**

give students a basic understanding of the production and properties of the most important classes of organic compounds.

## **Pathology**

### **Аннотация:**

The study of the discipline provides the formation of a systematic view on the issues of health, illness, morbidity, death; the nature of common typical pathological processes and the manifestation of major diseases by various functional human systems.

As a result of studying the discipline, students form a holistic view of the mechanism of development and clinical manifestations of pathological processes, which is necessary for the subsequent study of the discipline "Pharmacology".

Mastering the discipline will allow students in the future to freely navigate the issues of the mechanism of action and effects of drugs, indications for their use.

### **Цель:**

Obtaining in-depth knowledge in the field of general nosology, general and private pathology, necessary in the professional activity of a pharmacist when handling medicines and conducting pharmaceutical counseling of patients.

### **Задачи:**

To form an idea about the etiology and pathogenesis of diseases, the principles of their classification; the concepts of health, illness, morbid condition, death, methods of resuscitation and types of treatment.

Contribute to the development of knowledge about reactivity and resistance; stress, shock and coma; inflammation, pain and fever; allergies and tumors.

Acquisition of knowledge about the mechanism, clinical course and outcomes of major diseases of the nervous system, cardiovascular system, respiratory system, urinary system, digestive system, blood clotting and hematopoiesis, metabolism.

## Pharmaceutical chemistry

### Аннотация:

As a result of mastering the discipline "Pharmaceutical Chemistry", students will get an idea about the methods of synthesizing drugs, methods for controlling the quality of drugs, learn how to carry out reactions of the authenticity of drugs, perform a quantitative analysis of pharmaceutical substances and drugs.

As a result of mastering the discipline Pharmaceutical chemistry, the student should have an understanding of the scientific picture of the world on the basis of provisions, laws and laws of natural sciences.

The main goal of this discipline is to give knowledge about drug synthesis of and drug analysis.

### Цель:

To reveal the methodology for the creation, assessment of the quality, standardization and safety of medicines based on the general laws of the chemical and biological sciences, their particular manifestations and the history of the use of medicines in accordance with the applied nature of pharmaceutical chemistry, to fulfill the professional tasks of a pharmacist.

### Задачи:

Objectives of the lecture course: presentation of the key issues of the program, the study of the most important pharmaceutical products, their receipt and storage.

Laboratory tasks:

- ensure the consolidation of theoretical material;
- to teach modern chemical and physico-chemical methods for the quantitative determination of drugs;
- teach to practically determine the presence of impurities in medicinal substances and drugs, to practically determine their presence and to establish their content within the standards in accordance with the requirements of the Global Fund;
- To teach to use the materials of the State Pharmacopoeia (GF), pharmacopeias of other states, regulatory documents (ND), pharmacopeia articles of enterprises (FSP)
- consider ways to implement the general principles of pharmaceutical chemistry in the creation of new drugs, in assessing the quality of drugs.
- to form the skills necessary for the activities of the pharmacist in the field of organization and quality control of medicines in accordance with the development prospects and in connection with the achievements of constantly developing fundamental physicochemical and biomedicalTo teach to use the materials of the State Pharmacopoeia (GF), pharmacopeias of other states, regulatory documents (ND), pharmacopeia articles of enterprises (FSP)
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- consider ways to implement the general principles of pharmaceutical chemistry in the creation of new drugs, in assessing the quality of drugs.
- to form the skills necessary for the activities of the pharmacist in the field of organization and quality control of medicines in accordance with the development prospects and in connection with the achievements of constantly developing fundamental physicochemical and biomedical sciences.

## **Pharmaceutical technology**

### **Аннотация:**

Pharmaceutical technology is the course that is intended for formation of knowledge of technological processes used in the manufacture of medicines, the choice of rational composition and technology of dosage forms, their manufacture and quality control in accordance with the requirements of regulatory documentation.

### **Цель:**

The purpose of pharmaceutical technology course is the formation of systemic knowledge and skills of students in the manufacture and quality control of medicines.

### **Задачи:**

1. Study of the theoretical foundations of various processes of conversion of active pharmaceutical ingredients and excipients into dosage forms.
2. Formation the ability to choose the composition and rational technology of dosage forms based on the requirements of current regulatory documents.
3. Formation of practical skills of manufacturing and quality control of medicines in pharmacy organizations.
4. Formation of skills of work and use of normative documentation, reference, and scientific resources for solving professional tasks.



## **Pharmacognosy**

### **Аннотация:**

Дисциплина дает системное представление о современном состоянии природных лекарственных ресурсов, что необходимо для выбора необходимых фармако-терапевтических групп препаратов.

Discipline gives a systematic picture of the current state of natural medicinal resources, which is necessary to select the necessary pharmaco-therapeutic groups of drugs.

### **Цель:**

To form in students the sum of knowledge, skills and practical skills in pharmacognosy, taking into account the recommendations for the procurement, standardization, quality control, storage and processing of medicinal herbal raw materials, as well as the ways of using raw materials and the use of herbal medicinal products in pharmaceutical practice.

### **Задачи:**

1. To teach students pharmacognostic analysis of medicinal plant materials;
2. Teach resource analysis of medicinal plants;
3. Teach standardization of medicinal raw materials;
4. Teach the correct mode of drying and storage of plant materials to ensure its good quality.

## **Pharmacology**

### **Аннотация:**

Discipline is a necessary part of the training of a pharmaceutical specialist. The content of the discipline includes the section "General Pharmacology", where questions of the structure, molecular mechanisms of action of drugs, patterns of their absorption, distribution and elimination in the human body are discussed. The section "Private pharmacology" includes questions of classification of medicines depending on the mechanism of action, their main pharmacological effects and justification of the possibilities of their use in various pathological conditions. As a result of studying the discipline, the student will learn to independently distribute medicines according to chemical, pharmacological and pharmacotherapeutic groups, freely navigate the modern nomenclature of medicines, argue for the possibility of replacing medicines with similar pharmacological activity.

### **Цель:**

The study of the basic fundamentals of pharmacology: the basics of the interaction of drugs with targets in a living system, the laws of pharmacokinetics and pharmacodynamics, the features of these processes for different groups of drugs and depending on the individual characteristics of the body, the possibilities and mechanisms of drug interaction with simultaneous administration. The study of the mechanisms of action of drugs at the cellular level and the development of the skill of self-determination of the group affiliation of drugs based on their pharmacodynamic characteristics. The study of ways of introducing medicines into the body, the formation of the skill of self-justification of the benefits of using medicines in certain dosage forms.

### **Задачи:**

The discipline is designed to form the skill of working with prescriptions as medical documents justifying the choice of a drug and the methods of its introduction into the patient's body, to develop the skill of identifying the relationship between the mechanism of action of the drug and its main side effects during its use, to form an idea of the interdependence of the main indications for the use of a particular drug and absolute contraindications or restrictions to its use. The discipline promotes the development of ideas about the possibilities of using a drug of the same pharmacological group in various nosologies.

## Physical and colloid chemistry

### Аннотация:

Данный курс включает в себя основы разделов физической химии и химии дисперсных систем, понимание которых важно для студентов, обучающихся по направлению "Фармация", такие как химическая термодинамика, химическая кинетика, электрохимия, химия дисперсных систем и физико-химия явлений адсорбции.

This course includes the main topics dealing with the Physical Chemistry and Chemistry of Disperse Systems, such as Chemical Thermodynamics and Kinetics, Electrochemistry, Classification of Disperse Systems and Adsorption Phenomena.

### Цель:

The consideration of the key questions of Physical Chemistry, which can lead to the understanding the reasons of different physico-chemical phenomena is the main target of this course

### Задачи:

1. To give for the students the understanding how and why the processes can go on spontaneously from the thermodynamical point of view.
  2. To give for the students the understanding of the rate of the reaction and the factors affect it.
  3. To consider the nature and principles of electrochemical processes and also the factors influence the rate the probability of these processes.
  4. To give the understanding about the nature of the solutions, there differences from the pure substances, solvents and solutes.
  5. To give for the students the understanding of the nature and thermodynamics of adsorption phenomena on different phase boundaries.
- 
1. Сформировать понимание возможности протекания того или иного процесса с термодинамической точки зрения.
  2. Сформировать понятие о скорости химической реакции и способах влияния на этот параметр.
  3. Рассмотреть природу и принципы протекания электрохимических процессов, а также параметров, от которых зависит их скорость и вероятность протекания.
  4. Сформировать представление о природе растворов и их отличии от чистых веществ: растворителя и растворённого вещества.
  5. Дать представление о природе и термодинамике адсорбционных явлений на разных типах границ раздела фаз.

## Physics

### Аннотация:

Дисциплина представляет собой курс общей физики на английском языке для студентов химического факультета, специализирующихся в области фармации. Включает в себя все разделы физики, необходимые в дальнейшем для освоения узкопрофильных предметов, связанных с химией, биологией и фармацевтикой.

The discipline "General Physics" is oriented on English-speaking students of Chemical faculty which are specialized in a field of pharmacy. This course includes all branches of physics which are necessary for the study of narrow-purpose subjects connected with chemistry, biophysics, biology and pharmacology.

### Цель:

The course of "Physics" is included into the natural-science cycle of disciplines which is compulsory for study. The discipline is directed on the formation of general cultural and professional competencies of the graduating student. Discipline forms the natural-science world outlook, develops the fundamental understanding of physical phenomena, permits to generalize the data of observations, gives practical experience and experimental skills. The educational program provides the following types of monitoring: input control in the form of written test, intermediate examination in the form of protection of laboratory works. Certification of the content mastering is carried out in the form of an exam. The total labor intensiveness of the discipline is equal to 4 credits (144 academic hours). The course program includes laboratory, practical and lecture classes, as well as independent work of students.

### Задачи:

The tasks of the course are

- to expound the basic principles and laws of physics and show it's mathematical expression,
- to familiarize students with the main physical phenomena, basic methods of it's theoretical description,
- to give knowledge on the methods of experimental research, processing and analysis of experimental results,
- to familiarize with the work of basic physical devices,
- to teach students to the simplest methods of data processing with the help of computer,
- to form the skills of experimental work,
- to acquaint with the basic principles of automation of physical experiment,

We teach students to the comprehensive application of the studied physical laws in practice. At the end of teaching the students have to be able to apply the methods of mathematical analysis and modeling, theoretical and experimental research in their professional activity.

## **Psychology**

### **Аннотация:**

The discipline of psychology is included into the basic and variant components of humanities, economics, and social sciences series. The discipline aims at the formation of the following skills among undergraduates: cooperation with colleagues, progress in personal and behavioral merits and elimination of shortcomings, abilities to evaluate effectively his or her own merits and shortcomings in various psychological areas, knowledge of psychological principles according to requirements to teacher's job.

The fundamental categories, subject, and methodology of contemporary psychology as well as the essence of mental features and processes are considered. The psychological aspects of professional work as well as the fundamentals of social psychology are contemplated.

The intermediate check test concerning the "Introductory psychology", "Personality and its traits", "Mental processes" subjects is administered.

The end-of-term test is administered as a final assessment of academic performance in the discipline.

### **Цель:**

Formation of ability to analyze the issues of the subject, history, tasks and actual problems of General psychology, methods of psychological research, personality, temperament, character, abilities, motivation, intelligence, as well as ideas about the problems of consciousness and unconscious.

Improving the competence of students in the field of psychological knowledge.

Give a basic understanding of the basics of psychology, teach how to build interpersonal relationships.

### **Задачи:**

To know and analyze scientific facts from the standpoint of everyday and scientific psychological knowledge. To have an understanding of psychology subject and object. To know the value of psychological knowledge in their own professional area of activity. To know the modern understanding of the individual characteristics and its manifestation in activities and communication. To have a detailed understanding of human cognitive activity. To know the cognitive processes, as well as ways of its development.

Be able to analyze the main characteristics of communication.

To know the ways of effective interpersonal communication.

## **Russian Language and Rhetoric**

### **Аннотация:**

The development of Russia as a democratic state with a market economy places high demands on the speech culture of its citizens, understood broadly as the ability to such choice and such organization of linguistic means in the process of speech activity, which in a particular situation of communication, while respecting modern language norms and ethics of communication allow to provide the greatest effect in achieving the set communicative tasks.

Discipline is aimed at deepening knowledge about the system of the Russian language and its stylistic stratification; development of spelling, punctuation and speech literacy; the development of students' ideas about the qualities and criteria of a good literary speech; study of the foundations of rhetoric, rhetorical reasoning and rules of constructive dispute; development of mastery of public speech; ultimately - the formation of a communicatively competent person, capable of effective communication in professionally significant situations

### **Цель:**

The main purpose of the discipline "Russian language and rhetoric" is to form a linguistic personality, who, knowing the actual language, communicative and ethical standards, is able to effectively use the Russian language in actual situations of speech communication, especially professional. This determines the content of the discipline, which includes two parts: 1) "culture of speech and functional style"; 2) "Speech communication and rhetoric." The content of the first part is dominated by the components of grammar (device) and pragmatics (use) of language units; actually speech problems are represented by the concepts of text, style, genre, as well as the study of scientific and business speech in their oral and written forms. The content of the second part is exclusively speech: it discusses the rules of effective speech communication, the causes of communication failures and failures, the basics of oratorio (public speech), the culture of polemics and many others. et al.

Since first-year students, as a rule, do not yet have such a set of knowledge and skills in the field of Russian language, which would allow them to fully master the speech culture without systematic repetition and deepening of the linguistic foundations of the subject, the discipline program provides such cultural and speech training of students, which is carried out in parallel and in close cooperation with the repetition, deepening and systematization of information about all levels and units of language-with emphasis on their functional specificity (use in speech).

### **Задачи:**

deepening knowledge about the system and structure of the Russian language and its stylistic stratification;

- development of spelling, punctuation and speech literacy;
- development of students' ideas about the qualities and criteria of good literary speech;
- mastering the basic principles of scientific and business communication in oral and written forms;
- familiarity with the basic laws of effective speech communication;
- study of the basics of rhetoric, rhetorical argumentation and rules of constructive dispute;
- development of public speaking skills

## Sociology

### Аннотация:

Дисциплина имеет целью дать целостное представление о социологической науке, показать ее значение для познания общества и решения актуальных проблем социальной жизни. Акцент сделан на аналитическом подходе к изучению проблемного поля современной социологии, ее понятийного аппарата, концепций и теорий, позволяющих глубже понимать процессы, происходящие в обществе.

Курс состоит из трех теоретических частей. В первую часть включены темы, раскрывающие научный статус социологии, становление и развитие социологической теории, методологию и методы социологического исследования. Во второй части представлены темы, рассматривающие общество как социальную систему и его базовые понятия: социальная структура и стратификация, социальные институты и процессы. В третьей части внимание студентов сконцентрировано на социологических концепциях культуры, социокультурном подходе к анализу социальной жизни, социокультурных процессах. Курс ориентирован на развитие социологического мышления, способности научно осмысливать и объяснять социальные явления.

The course is aimed at introducing students to sociology as a means to study society and develop ideas for advancing social progress in important spheres of social life. The course is focused on analytical thinking, conceptual apparatus, approaches, and theories that guide to deeper understanding of social processes and forces. The course consists of three theoretical parts. The first part considers the scientific status of sociology, the origins and development of sociological theories, methods of data collection, and research methodology. The second part presents an overview of social institutions, social structure, social change, and society as a system. The third part introduces students to ethnography of culture. After completing the course, students are expected to have developed sociological thinking, the capacity to understand and explain social phenomena scientifically.

### Цель:

Course scope. The course is intended to develop a holistic understanding of social phenomena and processes, of structure and specificity of theoretical sociological knowledge, of the applied nature of sociology as science.

### Задачи:

Course objectives are:

- to suggest comprehension of sociology as a science and educational course;
- to represent the basic sources of sociology emerging as science;
- to develop understanding of classical and contemporary sociological theories and approaches;
- to introduce into analysis of social issues, processes, and change;
- to give an overview of research methods.

## **Philosophy**

### **Аннотация:**

The discipline is aimed at the formation of knowledge about the major achievements of world philosophical thought, the current state of scientific and philosophical knowledge, the relationship of philosophical thought with the development of natural science, social and humanitarian sciences, social and historical practice, the problems of Russia's development. The course of philosophy includes two sections: general philosophy and social philosophy, which consider problems: the world as a system, the problem of the essence of the world, its unity and diversity, the problem of the essence of consciousness, its origin, structure and relationship with man, the problems of development and knowledge of the world, truth and practice, society as a complete system, laws of social development, principles and different approaches of historical typology of society, the life of society, especially postindustrial society, globalization processes, the essence and the essence of the historical process, the essence of the social and political science. The content is based on the idea of the historical process as a development of human essence.

As a result of mastering the discipline students become familiar with the main directions of world and domestic philosophical thought as a reflection of the cultural diversity of the modern world in its historical development, which allows you to use this knowledge to analyze modern social reality, social processes, the prospects for social development. The connection of philosophy with natural sciences and social and humanitarian sciences will allow to use scientific, systematic and interdisciplinary approaches to knowledge of nature and society, to solve the problems of science and practice. In philosophical science its very subject is dialectical, which creates favorable conditions for dialectical analysis, teaches to understand phenomena and processes as complex, being in development, including many dialectically interrelated sides, develops the ability to analyze problem situations as a system, identifying its components and connections between them, teaches to see, set and solve problems, see the relationship between different fundamental problems, develops the ability of substantive, essential, nomological their solution.

### **Цель:**

The purpose of the course of philosophy is the formation of knowledge about the main achievements of world philosophical thought, the current state of scientific and philosophical knowledge, the connection of philosophical thought with the development of natural science, social sciences and humanities, and general historical practice. The assimilation of philosophical knowledge is considered as an indispensable condition for the formation of a personal worldview, intellectual abilities, ability to lead discussions, to defend the arguments of science convincingly, to creatively apply this knowledge.

### **Задачи:**

- to give knowledge about the subject and the main problems of philosophy, its main directions and stages of development, about modern philosophical systems;
- to find out the role of philosophy in the development of society, the natural, social and technical sciences, art and culture in general;
- based on the principles of science and pluralism, to promote the formation of a realistic humanistic worldview, personality development, and creative thinking skills.



## **History**

The discipline "History" is focused on the knowledge of the driving forces and laws of the historical process, the specifics of Russian history, the ability to analyze historical events and processes. The content of the discipline covers a range of problems associated with the definition of the place and role of Russia in the world historical process. As a result, students will learn the specifics of social, economic, and political processes at different stages of Russian history.

### **Цель:**

The aim of the course is to form the general cultural competence of the graduate associated with knowledge and respect for the historical heritage and cultural traditions of the country, tolerant perception of social, ethnic, religious and cultural differences, the ability to analyze the main stages and patterns of historical development of society.

### **Задачи:**

- to form a scientific understanding of the main stages of Russian history;
- to identify general and particular features of the Russian historical process;
- to contribute to the formation of the student's personality, combining scientific worldview, respect for historical heritage, patriotism;
- to teach students to express and justify their position on issues related to the historical past of our country.

## **Foreign Language (English)**

### **Аннотация:**

The discipline "Foreign Language (English)" is part of the federal component of the cycle of general humanitarian and socio-economic disciplines and is obligatory for all faculties and specializations. The discipline is aimed at formation of the following general cultural competence of the graduate: "Demonstrates knowledge of a foreign language". The discipline provides preparation of bachelors for the International English Language Testing System (IELTS) examination. The discipline is studied at the first and the second years of Bachelor course. The workload of the discipline is 12 credit units including tutorials and self-study hours. Types of control: placement tests (oral interview, paper or computer-based testing), mid-term control (lexical and grammar tests), examinations after each term.

### **Цель:**

Course Aims are to improve students' command of a foreign language as means of

- communication in various social and professional areas within multicultural context;
- sociocultural personal development;
- formation of personal values via the cultural dialogue of native and foreign languages.

Course Aims are to form

- skills to speak and write in English;
- ability to understand spoken English;
- ability to be an adequate participant of a conversation in English

### **Задачи:**

Course Objectives:

1. The course aims to consolidate knowledge obtained as part of school curriculum and to create learning prerequisites for achieving higher level.
2. to form and develop skills of skimming, scanning and intensive reading;
3. to form and develop listening skills for different areas;
4. to form and develop speaking skills for producing monologic and dialogic speech, participating in discussions, expressing personal opinion on a suggested problem, expressing agreement/disagreement.
5. to form and develop writing skills;
6. to introduce IELTS (International English Language Testing System) format to students and prepare them for taking the exam successfully.

Course Objectives:

- to develop students' logical thinking, different types of memory, imagination, ability to independently practice a foreign language;
- to broaden students' cultural horizons via oral and written language practice;
- to form students' strong interest to acquiring further knowledge and skills in a foreign language they study.

## **Life safety**

### **Аннотация:**

The discipline "Life safety" is aimed at ensuring a favorable living conditions of people and their activities, to protect the person and environment from the hazardous or harmful effects, at shaping of common cultural possession of basic skills means to protect staff at work and the other population from the possible consequences of accidents, natural disasters .

The subject of the discipline "Life safety" is the issues security interaction of human with his environment and protect people from hazards in an emergency.

### **Цель:**

The purpose of the discipline is to form in future specialists an idea of the inseparable unity of effective professional activity and the requirements of human safety and security. The implementation of these requirements guarantees the preservation of human performance and health, prepares him for action in extreme conditions.

### **Задачи:**

The main objectives of the discipline are as follows: providing students with theoretical knowledge and practical skills necessary to create a comfortable state of the environment in the areas of work and recreation of a person; identification of negative environmental impacts from negative impacts; implementation of measures to protect humans and the environment from negative impacts; ensuring the sustainable functioning of economic facilities in accordance with the requirements of safety and environmental friendliness in normal and emergency situations; making decisions on the protection of personnel and the public from the possible consequences of accidents, catastrophes, natural disasters, as well as taking measures to eliminate their consequences; forecasting the development of negative impacts and assessing the consequences of their actions.

## Applied physical culture

### Аннотация:

For students of all areas of training and specialties, the discipline "Applied Physical Culture" is implemented in the amount of 328 academic hours (8 trimesters) to ensure the physical fitness of students, including professionally-applied ones. The indicated academic hours are obligatory for mastering and are not transferred to credit units. In each trimester, the following sections are provided for independent study: cross-training, athletics, ski training, general physical training, stretching, sports.

The discipline program "Applied Physical Culture" is aimed at:

- the implementation of the principle of variability, the more complete implementation of a personality-oriented approach to the educational process, the planning of the content of educational material, taking into account the health status of students;
- on the implementation of the principle of sufficiency and structural conformity of program material, its direct orientation to generally applied and personally significant physical training;
- for the acquisition by students of knowledge, skills and fitness activities, manifested in the ability to conduct classes on their own to improve health, improve physical development and physical fitness, both in educational activities and in various forms of outdoor activities and leisure.

For students with disabilities, classes in the sports section "Chess" are provided as an alternative to classes with increased motor activity.

For students of all directions of preparation and specialties discipline "The application-oriented physical culture" is implemented of 328 class periods (8 trimesters) for support of physical fitness of students, including professional and application-oriented character. The specified class periods are mandatory for mastering and aren't transferred to test units. The following sections are provided in each trimester for an independent study: the cross preparation, track and field athletics preparation, ski preparation, general physical training, stretching, sports.

The program of discipline "Application-oriented physical culture" is directed:

- on implementation of the principle of variability, completer implementation of the personal oriented approach to educational process, on planning of maintenance of a training material taking into account the state of health of students;
- on implementation of the principle of sufficiency and structural conformity of program material, its direct orientation to all-application-oriented and personal and significant physical training;
- on acquisition by students of knowledge, the skills of sports and improving activities which are shown in ability independently to give classes in solidifying of health, enhancement of physical development and physical fitness, both in the conditions of educational activities, and in different forms of the active recreation and leisure.

### Цель:

The goal of mastering the discipline is to form the physical culture of the individual and the ability to use the various means of physical culture, sports and tourism in order to preserve and promote health, psychophysical training and self-preparation for future professional activities through

ensuring the stages of formation of competencies stipulated by educational standards.

### Задачи:

The tasks of the discipline are:

- preservation and strengthening of students' health, promoting the proper formation and comprehensive development of the body, maintaining high performance throughout the entire period of study;
- understanding of the social significance of applied physical culture and its role in the development of the personality and preparation for professional activity;
- knowledge of the scientific and biological, pedagogical and practical fundamentals of physical culture and a healthy lifestyle;
- the formation of a motivational and axiological attitude towards physical culture, an attitude towards a healthy lifestyle, physical improvement and self-education of the habit of regular exercise and sports;
- mastering the system of practical skills that ensure the preservation and strengthening of health, mental well-being, development and improvement of psychophysical abilities, qualities and personality traits, self-determination in physical culture and sports;
- acquisition of personal experience in enhancing motor and functional capabilities, ensuring general and professional-applied physical fitness for a future profession and life;
- the acquisition by students of the necessary knowledge of the basics of the theory, methodology and organization of physical education and sports training, preparation for work as public instructors, coaches and judges;
- creation of the basis for creative and methodologically reasonable use of physical culture and sports activities for the purposes of subsequent life and professional achievements;
- improving the sportsmanship of student-athletes.

## **Physical culture**

### **Аннотация:**

For students of all directions of preparation and specialties the Physical culture module is implemented within discipline "Physical culture" of a basic unit of Blok of 1 programs of a bachelor degree and specialist programme in volume of the 72nd class period (2 test units). The discipline contains the information necessary for a study of a theoretical part of the program. All program is partitioned into 2 educational periods. The study of such sections of the program as is provided in the first educational period:

- Physical culture in common cultural and vocational training of students;
- Biological fundamentals of physical culture and sport;
- Physical training in system of physical training;
- Medical monitoring and self-checking engaged in physical exercises and sport;
- Bases of a healthy lifestyle. Physical culture in support of health;
- Professional and application-oriented physical training.

The study of such sections of the program as is provided in the second educational period:

- Bases of a healthy lifestyle. Physical culture in support of health;
- Bases of a technique of independent occupations physical and exercises;
- Sport. Personal choice of sports or system of physical exercises;
- Features of occupations by the selected sport or system of physical exercises;
- Professional and application-oriented physical training.

Also training program provided training in the correct performing diagnostics of a status of the functional systems of a human body, such as: respiratory, nervous, cardiovascular, muscular systems and general operability of an organism.

### **Цель:**

The formation of students in the University of physical culture of the individual, manifested in the readiness for future professional activities, one of the important conditions of which is - knowledge of socio-biological and psychophysical foundations of mental work.

### **Задачи:**

The objectives of the course coincide with the main objectives of physical education in high school. Among them: - understanding of the social role of physical culture of the individual; - acquisition of students' knowledge of the biological foundations of physical culture; - acquisition of knowledge about the basics of the theory and methodology of physical education and sports training and mastering students of sports terminology. This will facilitate mutual understanding between the student and the teacher and expand the General cultural needs of students; - formation of belief in the need for regular physical training and sports and a motivated attitude to a healthy lifestyle (HLS); - understanding of the special importance of physical exercise for mental workers.

## **General hygiene**

### **Аннотация:**

Discipline forms a systematic understanding of issues related to hygienic requirements for food, water, air, working conditions and recreation rights.

### **Цель:**

To form in the future pharmacist knowledge of the basics of hygiene and the ability to give a hygienic assessment of the working conditions and mode of operation of pharmacies in the manufacture, storage and sale of medicines, to develop sanitary and hygienic and anti-epidemic measures. Mastering by students the most important basics of hygiene, mastering the methods of assessing environmental factors and the principles of the correct organization of sanitary and hygienic, anti-epidemic regime in the manufacture and dispensing of drugs in pharmacies and at pharmaceutical industry enterprises.

### **Задачи:**

Formation of a specialty of pharmacy in students of preventive orientation of thinking. Preventive work is an integral part of the pharmacist's activities, and includes: mastering the methods of hygienic assessment of the main environmental factors, working conditions in pharmacies, and the mode and nature of the work of pharmacists; detection of violations of sanitary and hygienic and anti-epidemic regime of manufacture, storage and sale of medicines; developing students' ability to carry out the necessary measures to ensure optimal conditions for the professional activities of staff; implementation of measures for the formation of a motivated attitude of the adult population and adolescents to preserve and strengthen their health and the health of others, to implement recommendations aimed at increasing physical activity, to distribute patients into groups for physical culture and sports, taking into account their health status, to attract attached contingent to active physical culture and sports; carrying out preventive and anti-epidemiological measures aimed at preventing the occurrence of infectious diseases; carrying out activities for the hygienic education and prevention of diseases among adults and adolescents, the creation in medical organizations of favorable conditions for the stay of patients and the work of medical personnel; implementation of dispensary observation of the adult population and adolescents, taking into account age, gender and initial health status, conducting activities aimed at improving the effectiveness of clinical examination among decreed contingents and chronic patients; the collection and medical-statistical analysis of information on the health indicators of the population of different age and sex groups, characterizing their health status.

## **Human Anatomy and physiology**

### **Аннотация:**

Anatomy is the science about the shape and structure of an organism in relation to its functions, development, and under the influence of the environment. Physiology is the science about processes of a living organism, its organs, tissues and cells, their relationship to the change of various conditions and conditions of the body.

The subject of human anatomy involves the form and structure, origin, and development of the human body. Anatomy is one of the fundamental disciplines in the system of medical and biological education, closely related to such disciplines as human anthropology and physiology, as well as comparative anatomy, evolutionary theory, and genetics.

### **Цель:**

The aim of the discipline is to develop a clear understanding of the functioning of organs and organ systems in close connection with the structure of organs and systems at the main stages of their development.

### **Задачи:**

1. Levels of Structural Organization of the Human Body.
2. Building of knowledge about the basic laws and mechanisms of functioning of various body systems.
3. Formation of ideas about the human body as a single functional system and that it's aimed to preserve itself in spite of changing environmental conditions.
4. Developing skills for working with reference, educational, scientific books and articles about human anatomy and physiology.
5. The information about the human anatomy and physiology is the basis for understanding of other disciplines (pathology, pharmacology, etc.).

## **Medical and pharmaceutical commodity science**

### **Аннотация:**

Medical and pharmaceutical commodity science is an academic discipline containing systematized scientific knowledge about the consumer properties of medicines, medical products, pharmacy assortment goods and the basics of pharmaceutical marketing

### **Цель:**

To form commodity-related thinking among students; to develop the ability for commodity analysis and marketing research of medical and pharmaceutical products, to determine the influence of storage conditions, type of packaging on the quality of medical and pharmaceutical products; to develop the ability to draw objective conclusions about the possibility of using products in medical and pharmaceutical practice

### **Задачи:**

The tasks of teaching and studying an academic discipline consist in the acquisition by students of academic, socio-personal and professional competencies, the basis of which is:

- ability to work with normative, technical documents, carriers of commodity information;
- the ability to use modern methodological approaches and methodological techniques to study the use value and use properties of pharmaceutical products;
- knowledge of the methods of classification and codification of goods;
- possession of methods of conducting commodity expertise of medicines, medical products, pharmacy assortment goods;
- possession of methods and means of quality management of goods and their promotion in the pharmaceutical market;
- in-depth study of issues related to the conclusion of contracts, transportation, acceptance, storage, sale, consumption, disposal and destruction of pharmaceutical products.
- knowledge of the principles of formation of a rational assortment of goods of pharmacy and pharmaceutical organizations



## Medicinal chemistry

### Аннотация:

Medicinal chemistry is discipline at the intersection of chemistry, especially synthetic organic chemistry, and pharmacology and various other biological specialties, where they are involved with design, chemical synthesis and development for market of pharmaceutical agents, or bio-active molecules (drugs). Medicinal chemistry in its most common practice—focusing on small organic molecules—encompasses synthetic organic chemistry and aspects of natural products and computational chemistry in close combination with chemical biology, enzymology and structural biology, together aiming at the discovery and development of new therapeutic agents.

At the biological interface, medicinal chemistry combines to form a set of highly interdisciplinary sciences, setting its organic, physical, and computational emphases alongside biological areas such as biochemistry, molecular biology, pharmacognosy and pharmacology, toxicology and veterinary and human medicine; these, with project management, statistics, and pharmaceutical business practices, systematically oversee altering identified chemical agents such that after pharmaceutical formulation, they are safe and efficacious, and therefore suitable for use in treatment of disease.

### Цель:

The purpose of the discipline "Medical Chemistry" are the formation of students' systemic knowledge about the structure and chemical transformations of low- and high-molecular organic compounds that take part in the life processes of the human body at the molecular level, as well as mastering the fundamental foundations of medicinal chemistry necessary for studying other academic disciplines and the acquisition of professional skills.

### Задачи:

Teaching of the discipline "Medicinal Chemistry" puts its main task to acquaint students with modern ideas about the mechanisms of action of chemicals (natural and synthetic origin) on a living organism, to teach students to understand the modern methods of establishing the mechanisms of action of substances on the body and to understand the main directions in the creation and search for physiologically active substances.

The objectives of the course include:

presentation of the material on the basics of specific interaction of physiologically active substances with the systems of a living organism;

teaching students to understand that physiologically active substances are able to have on the body as a positive-therapeutic and negative-oppressive, toxic effects, which should form the student's thoughtful and careful approach to the creation of new compounds in the literature, aimed at practical application - treatment of diseases;

teaching students the methods of directed creation of new drugs and prediction (establishment) of possible mechanisms of their action; development of students' abilities to apply the knowledge gained in the performance of laboratory and research works.

The main purpose of the discipline is to form students' holistic understanding of the process of creating drugs, from the moment of the idea of the synthesis of substances of a certain structure, screening and improvement of the structure, up to the stage of clinical trials and organization of production.

## **Phytotherapy**

### **Аннотация:**

The content of the discipline covers a range of problems associated with the study of pharmacopoeial medicinal plants, including medicinal plants of the region; The issues of collection, storage and rational use of resources of medicinal plants. The study of theoretical material is complemented by the knowledge gained in the course of laboratory work.

### **Цель:**

Formation of systemic knowledge, skills and abilities on the rational use of medicinal plant raw materials in medicine and pharmacy.

### **Задачи:**

The objectives of the discipline are:

- to teach students the methodology of choosing medicinal plants for herbal medicine based on a clinical and pharmacological approach: dependence of the choice of a medicinal plant on the characteristics of the organism of a particular patient, age, nature of the accompanying pathology, allergological anamnesis, medicinal therapy received by them, pregnancy and lactation and other factors;
- to teach students to compose medical fees from medicinal plants, officially approved for use in medical practice in various pathological conditions, taking into account the peculiarities of the interaction of the components of the collection between themselves and pharmaceuticals.

## **Procurement and acceptance of medicinal raw materials**

### **Аннотация:**

Discipline involves the formation of an idea of the rational procurement and acceptance of medicinal plant materials, familiarity with the regulatory documentation governing all aspects related to these issues.

### **Цель:**

To form students' knowledge and practical skills on procurement (collection, drying, primary processing, acceptance, standardization and quality control during storage of medicinal plant materials, collections, herbal powders, dosage forms from them, obtaining standardized extracts; issues of rational use of medicinal resources plants, taking into account scientifically grounded recommendations for the procurement of standardization, quality control, storage and processing of medicinal plant materials.

### **Задачи:**

The objectives of the discipline are:

- 1) Learn how to determine the various operational and biological stocks, the yield of medicinal plant materials.
- 2) To form students' skills in the morphological analysis of medicinal plants.
- 3) To teach the rules of collection, primary processing, drying of medicinal plants of local flora.
- 4) To teach students methods of standardization of collected medicinal raw materials
- 5) Teach the correct use of regulatory documentation to address issues related to the procurement and acceptance of medicinal plant materials

## Toxicological chemistry

### Аннотация:

The discipline "Toxicological chemistry" forms and develops among graduates in the specialty "Pharmacy" competencies aimed at the formation of the fundamental preparation of a pharmacist for subsequent specialization in the field of forensic chemistry, clinical toxicology, narcology, criminalistics, clinical pharmacy, ecology and sanitary chemistry.

### Цель:

Formation of students' systemic knowledge in the field of toxicological chemistry, mastering the methodology of chemical-toxicological and forensic chemical analysis.

### Задачи:

As a result of mastering the discipline, the student must:

Know:

- moral and ethical standards, rules and principles of professional behavior;
- classification of narcotic drugs, psychotropic and other toxic substances and their physico-chemical characteristics;
- basic laws of distribution and conversion of toxic substances in the human body (toxicokinetics, toxicodynamics), general characteristics of the toxic effect;
- general rules for conducting a forensic chemical examination and chemical toxicological analysis for diagnostic purposes;
- the main directions of the development of chemical-toxicological analysis and the activities of chemical-toxicological laboratories, poison treatment centers, forensic examination bureaus, drug treatment clinics;
- principles for ensuring the quality of analytical diagnostics and forensics, types of expert errors.

Be able to:

- build and maintain working relations with all members of the team;
- conduct chemical-toxicological studies of various objects on toxic substances, applying knowledge of biochemical and analytical toxicology, using physico-chemical and chemical methods of analysis;
- carry out analytical diagnosis of acute intoxication, taking into account the characteristics of the chemical-toxicological analysis;
- conduct analytical diagnostics of narcotic drugs, psychotropic and other toxic substances in biological environments of the human body;
- interpret the results of chemical-toxicological analysis taking into account the processes of biotransformation of toxic substances and the possibilities of analytical research methods;
- document laboratory and expert research.

Have:

- principles of deontology and medical ethics;
- skills in using chemical, instrumental methods of analysis to identify and determine toxic, narcotic substances and their metabolites;
- skills of using express methods of analysis for the analytical diagnosis of drug addiction, substance abuse, acute poisoning;
- basic principles of documentation of chemical toxicological studies;
- use normative, reference and scientific literature to solve professional problems.

## **Normative documentation in pharmacy**

### **Аннотация:**

The discipline forms the professional knowledge and skills of a specialist working in the pharmaceutical field, taking into account modern regulatory legislative and regulatory legal acts. During the course of studying the discipline, the student will master information about the rights of citizens to receive medical care in accordance with the Constitution of the Russian Federation, will study the fundamental legislative and regulatory legal acts in the field of circulation of medicines, will be able to apply in practice the provisions of legislation on consumer protection of pharmaceutical goods and services

### **Цель:**

The study and deepening of knowledge about regulatory documents related to pharmaceutical activities in order to gain the skill of independently solving issues in the field of providing high-quality pharmaceutical care to the population.

### **Задачи:**

- formation of ideas about the conceptual apparatus of legislative and regulatory legal documents in the pharmaceutical field;
- deepening of knowledge on the provisions of legislative and regulatory legal acts regulating the processes of circulation of medicines on the Russian market;
- study of the functions, rights and obligations of the pharmaceutical control and supervision bodies set out in the administrative regulations of the activities of these bodies;
- acquisition of knowledge in the field of sales rules and consumer protection;
- study of the functions, rights and obligations of control and supervision bodies in the consumer market, set out in the administrative regulations of the activities of these bodies.
- acquisition of knowledge in the field of legislative and regulatory legal regulation of pharmaceutical organizations as trade organizations and healthcare institutions.

## **Statistics in pharmacy**

### **Аннотация:**

Forms students' knowledge and skills in the field of statistics, and promotes the study of such disciplines as economics, economic informatics, and organization economics in higher education.

### **Цель:**

The purpose of creating teaching materials is to provide high-quality methodological equipment for the special discipline "Statistics in Pharmacy", that is, to increase the effectiveness of theoretical and practical classes due to a clearer organization of these classes by the teacher, creating targets for each topic, systematizing the material along the course material and methodological support of educational processes.

### **Задачи:**

The objectives of the discipline "Statistics in Pharmacy" is to train students to develop, collect, systematize, use statistical methods in scientific research in pharmacy and obtain statistical conclusions about the object of study.

## **Fundamentals of computer modeling and design of medicinal products**

### **Аннотация:**

The course examines a targeted search for biologically active compounds, starting with a mathematical (previously empirical) prediction, implemented in a targeted synthesis, continuing to modify the resulting leader compound, and ending with the creation of a drug. Informational and theoretical material prepares students for a meaningful, purposeful approach in the implementation of their theoretical knowledge in a practically significant area of organic chemistry in the search and design of new drugs.

### **Цель:**

Formation of students' knowledge, skills and abilities, allowing them to conduct a targeted search for molecular structures of new pharmacologically active compounds with predictable types of biological activity.

### **Задачи:**

Teaching the discipline "Mathematical Methods for Modeling Biologically Active Compounds" sets its main task to acquaint students with modern ideas about the creation of drugs, methods of mathematical modeling of biologically active structures.

The objectives of the course include: the presentation of the material on the basics of mathematical modeling of biologically active compounds and the compilation of a mathematical prediction.

## **Psychotropic substances, prevention of dependence and examination**

### **Аннотация:**

Knowledge of the discipline allows you to assess the social significance of drug addiction, substance abuse. Mastering these methods allows you to conduct forensic chemical and forensic pharmaceutical expertise.

### **Цель:**

Formation of students' knowledge, abilities and skills necessary for the production of expert examinations, including research on narcotic drugs, psychotropic substances and medications, for carrying out anti-drug activities.

### **Задачи:**

The objectives of the discipline "Psychotropic substances, prevention of dependence and examination" is to ensure that students acquire theoretical knowledge and practical skills on the following aspects:

- The main theoretical principles of the psychology of addiction, the theoretical foundations of prevention, psychotherapy and rehabilitation of dependence on drugs, alcohol and other psychoactive substances.
- Modern theories of etiology and pathogenesis of alcohol and drug addiction, as well as conceptual models of prevention.
- Characteristics of symptoms and substance dependence syndromes.
- Familiarity with the clinical picture and the clinical and psychological dynamics of its formation with the abuse of alcohol, stimulants, hashish and hallucinogens.
- Basic methods for determining the consumption of psychoactive substances.



## **Analysis of organic compounds**

### **Аннотация:**

Данный курс построен на основе уже имеющихся теоретических знаний и практических навыков студентов в области органической и аналитической химии и способствует приобретению практических навыков по качественному и количественному анализу органических соединений, идентификации и физико-химическим методам определения органических веществ.

This course is built on the basis of existing theoretical knowledge and practical skills of students in the field of organic and analytical chemistry and contributes to the acquisition of practical skills in the qualitative and quantitative analysis of organic compounds, identification and physico-chemical methods for determining organic substances.

### **Цель:**

Main aim in generalization and systematization students' knowledge of the structure and reactivity of the main classes of organic compounds; give an idea of the chemical, physical and physico-chemical methods of functional analysis; to work out the most common chemical tests for the most important functional groups, methods for obtaining derivatives for identification, and some quantitative methods for the determination of organic compounds of various classes.

### **Задачи:**

This course is built on the basis of already existing theoretical knowledge and practical skills of students in the field of organic and analytical chemistry and involves their generalization, systematization, deepening and acquisition of practical skills in identifying and quantifying methods for determining organic substances of various classes. Knowing the basics of the functional analysis of organic compounds will allow students to competently approach the problems associated with the synthesis, isolation, purification, analysis and identification of organic compounds during graduation and diploma works.

## **Bioethics**

### **Аннотация:**

Биоэтика – это новый раздел прикладной этики, поэтому её изучение предполагает предварительное знакомство студентов с основными этическими теориями. Содержание дисциплины охватывает круг антропологических, моральных, социальных и юридических проблем, вызванных развитием новейших биомедицинских технологий. Целью дисциплины является формирование представления о биомедицине как сфере осуществления специфических властных отношений в современном обществе, и получение навыков распознавания угроз таким фундаментальным ценностям как жизнь, свобода, справедливость, гуманность. В дисциплине рассматривается также возможность применения этических категорий по отношению к другим живым видам и биосфере в целом. Ставятся и решаются проблемы, возникающие в контексте бурного прогресса современных биомедицинских технологий, медиализации общественной жизни

Bioethics is one of new sections of ethical thought which is in touch with biological and medical sciences. The aim of bioethics is moral analysis of wide spectrum of problems created by modern biomedical progress and its technologies. Bioethics learns to search and find biomedical risks and threats which are dangerous for such fundamental values and rights as life, good, freedom, health, justice, equality, safety and so on. Bioethics also tries to improve relationships between humanity and other forms of the Life, increase human conscientiousness in his influence on biosphere as a whole.

### **Цель:**

- to form a comprehensive relation to the Life on the basis of moral norms, demands and principles, other mechanisms which provide using new results of world science and technics in the aim for the good of human and nature

- to show the place of bioethics as discipline and social institute in process of protection of human life and health from possible biomedical and pharmacological aggression, solving fundamental ethical problems which appear during rapid progress of new biomedical technologies

### **Задачи:**

1. To understand historical and theoretical background of bioethics as science
2. To analyze fundamental moral problems, which are in the field of this science
3. To embrace different bioethical conceptual positions, their arguments for and against
4. To get acquainted with several official documents which try to regulate relations in the field of bioethic, show their role in providing human rights for life, health and well-being/
5. To develop ability for independent solving bioethical dilemmas which can appear in future professional activity

## **Cosmetic medicines with the basics of medical cosmetics**

### **Аннотация:**

The content of the discipline includes the classification of skin diseases and cosmetic defects, the features of the structure of the skin as an organ and its main functions in relation to the body as a whole, the content of the basic concepts of the use of cosmetics for skin care from the point of view of preserving its appearance, and from the position of maintaining and preserving its health. Within the framework of the discipline, the issues of the use of cosmetics as part of the complex therapy of certain pathological conditions, the diversity and validity of the component composition of cosmetic compositions and the prospects for the development of cosmetology and the production of cosmetics are discussed.

### **Цель:**

Deepening of theoretical knowledge about the features of the anatomy of the skin and its main functions. To study the features of the development of pathological processes in the skin and the possibilities of reasonable use of drug therapy and cosmetics. The study of the chemical composition of cosmetic compositions depending on their practical purpose and in the context of their impact on skin health. Development of the ability to critically assess the possibility of using a cosmetic product from the position of its ingredient composition.

### **Задачи:**

The discipline is designed to form the skills of practical use of the basic concepts of dermatology and cosmetology in terms of the use of cosmetics in the treatment of certain skin diseases, in the framework of information and educational work with consumers of cosmetic products, including those sold through pharmacy organizations.

## **Pharmaceutical Informatics**

.Discipline gives an idea about the information resources used in the work of a pharmacist, about the methods of finding the necessary information materials.

### **Цель:**

The purpose of creating the CMD is to provide high-quality methodological equipment for the special discipline "Pharmaceutical informatics", that is, to increase the effectiveness of theoretical and practical classes due to a clearer organization of these classes by the teacher, creating targets for each topic, systematizing the material along the course, the relationship of the course, full material and methodological support of educational processes.

### **Задачи:**

The objectives of the discipline "Pharmacy informatics" are:

- the formation of skills of practical use of software products widely used in pharmaceutical institutions, the study of standard informatics tools for solving medical problems;
- the study of special medical technologies and systems;
- the acquisition of skills to use computer communications;
- the formation of skills to obtain professional information from various sources, its processing, storage, optimal protection;
- development of the ability to create a solution plan and implement it using selected methods;
- development of the ability to analyze and practical interpretation of the results obtained;
- development of the ability to use all sorts of reference materials and manuals needed to solve practical problems.

## **First aid**

### **Аннотация:**

. The discipline "First aid" is aimed at providing and is intended for students of the specialty "pharmacy"

The discipline "First aid" is devoted to one of the most important problems of modern medicine - the provision of medical care to suddenly ill and injured in emergency situations.

Discipline "first aid" plays an important role in the structure of the up and occupies a Central place in view of the scale and high frequency of natural and man - made disasters dictates the urgent need to prepare the pharmacist rules of conduct and the provision of self-and mutual assistance in emergency situations.

### **Цель:**

The tasks and purpose. of the training program is aimed at developing fundamental knowledge and skills of providing medical aid: to teach students the principles of diagnostics of emergency conditions that threaten life; properly to perform cardiopulmonary resuscitation; apply standard tools to temporarily stop the bleeding; to produce injection drugs; to impose a standard vehicle tire; to bandage the wounds; to introduce the basics of asepsis and antisepsis; regulations on the transport of sick and injured; rules of care for patients; rules of care for the most common emergency conditions.

For successful assimilation of the program materials are included in the program, in an accessible form the symptoms of various traumatic illnesses are described. Also, methods and methods of emergency first aid for certain injuries to their health are given. First of all, such traumatic injuries as burns, various wounds, bruises, poisoning, bites of animals and poisonous snakes, as well as insects are considered. It is also told about foreign bodies entering the body (nasal passages, ears, throat, trachea, etc.). Much attention is paid to the prevention of traumatic effects on the body.

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## **Veterinary Pharmacology**

### **Аннотация:**

The discipline "Veterinary pharmacology" studies the properties of pharmacological substances and mechanisms of their action at the cellular, organ and systemic levels, substantiation of indications and contraindications for their use for the treatment and prevention of diseases, as well as for the regulation of physiological functions, increase of productivity and management of the behavior of farm animals, commercial and wild animals.

The course includes the formulation (medical and pharmaceutical), General and private pharmacology.

In the system of training pharmacist veterinary pharmacology is the basic science for the study of clinical disciplines - internal non-communicable diseases, surgery, obstetrics and gynecology, infectious and invasive diseases.

### **Цель:**

The purpose of the development of the discipline is the formation of students' knowledge about drugs used in veterinary medicine, the principles of their production, their properties and mechanism of action, methods of diagnosis, prevention and treatment of diseases developing as a result of toxic effects of drugs.

### **Задачи:**

The main objectives of this course are the following:

1. To study the device of the veterinary pharmacy, its work, structure and rules of preparation and prescribing, production of basic dosage forms.
2. According to the General pharmacology to study the General laws of the effect of drugs on animals, especially the pharmacokinetics of different groups of drugs, the dependence of the pharmacological effect of the properties of the substance, ways and means of administration, type, age, state of the body and other conditions.
3. In private pharmacology, to study the classification of substances into groups based on the system principle and for each group to study the General characteristics, mechanisms of action and pharmacodynamics, indications and contraindications for use, possible cases of poisoning and first aid measures in this case. According to the characteristics of individual drugs to know their Latin name, pharmacokinetics, mechanisms of action and pharmacodynamics, indications and contraindications, dose, form and route of administration.

## **Physico-chemical methods of analysis of medicinal forms**

### **Аннотация:**

In this course, the basics of physico-chemical methods of drug analysis are studied by IR-spectros and UV-spectrophotometry, potentiometric titration, chromatography.

The course gives the basics of instrumental methods used in the analysis of medicinal forms. Spectroscopical, electrochemical and chromatographical techniques, and standardizing methods described.

### **Цель:**

Familiarization with the basic physico-chemical methods of studying organic compounds that are part of dosage forms, the possibilities of their use for solving problems of identification, purity characteristics and analysis of dosage forms

### **Задачи:**

To acquaint future pharmacists with modern physical and chemical methods of studying organic compounds, their theoretical foundations, possibilities and areas of practical application.

## Resource management

### Аннотация:

.Дисциплина дает системное представление о современном состоянии природных лекарственных ресурсов, способах их учета и организации заготовки

The discipline gives a systematic view of the current state of natural medicinal resources, methods of accounting and organization of procurement

### Цель:

The formation of students' knowledge in the study of the resource science of medicinal plants consists in the comprehensive mobilization of plant resources for the needs of medicine, the study of specific types of medicinal plants by students, giving raw materials

### Задачи:

Teaching students to identify among the wild flora of those species, preparations of which have a pronounced pharmacological action and therapeutic effect

Study of the most promising medicinal plants for introduction into medical practice and solution of a number of issues (study of the chemical composition of a plant, dynamics of accumulation of the most important biologically active substances, the dependence of their qualitative composition and quantitative content on the location and environmental factors)

Quantitative assessment of stocks of medicinal plants for each region, including the identification of large commercial tracts of widespread species, as well as rare species and species that have become rare as a result of harvesting

Teaching students the resource-commodity study of medicinal plants

Study of rationing and standardization of medicinal plant materials

Chemical taxation in order to identify populations with the highest content of active ingredients

Studying the rate of recovery of thickets of medicinal plants after harvesting, as well as identifying ecologically clean thickets of medicinal plants in industrialized regions.