



MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
INSTITUTE (SCHOOL) OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

AGREED
Head of OP

(signature)

December 21, 2021



Yu.S. Khotimchenko
(FULL NAME)

APPROVE

Director of the Department of Pharmacy and Pharmacology

E.V. Khozhaenko
(signature) (I.O. Surname)

December 21, 2021

WORKING PROGRAM OF THE DISCIPLINE

Information and analytical modeling of social and hygienic processes

Direction of training 32.04.01 "Public Health"

Educational program "Leadership and governance in public health (program in English for foreign citizens)"

Full-time training form

course 2 semester 3

lectures at 6 p.m.

practical classes 36 hours.

total classroom hours 54 hours.

independent work 18 hours.

credit 3 semester

The work program of the discipline is compiled in accordance with the requirements of the Federal State Educational Standard of Higher Education in the field of study 32.04.01 Public health, approved by order of the Ministry of Education and Science of the Russian Federation dated May 31, 2017. No. 485.

The work program was discussed at the meeting Department of Pharmacy and Pharmacology, Protocol No. 4 dated December 21, 2021

Director of the Department Ph.D., E.V. Khozhaenko

Compiled by: candidate of medical sciences, associate professor Rasskazova V.N.

Reverse side of the title page of the RPD

1. The work program was revised at a meeting of the Department / department / department (implementing the discipline) and approved at a meeting of the Department / department / department (issuing structural unit), protocol dated “ ____ ” _____ 2021 No. _____
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I. Goals and objectives of mastering the discipline:

The purpose of the discipline: the study and acquisition of theoretical knowledge by students and the formation of skills and abilities in the conduct, organization and implementation of social and hygienic monitoring and the implementation of information and analytical modeling of social and hygienic processes in relation to public health and healthcare organization.

Discipline tasks:

- Familiarization with the historical aspects of socio-hygienic monitoring in the implementation of information and analytical modeling of socio-hygienic processes in relation to public health.

- Mastering the basic ideas about modern information and communication technologies, their development trends and specific implementations in the field of public health.

- The study of the main directions and methods of scientific research in social and hygienic monitoring in the implementation of information and analytical modeling of social and hygienic processes.

- Formation of practical skills in working with information technology software tools (software products, complexes, information resources, Internet resources, etc.) in the implementation of information and analytical modeling of social and hygienic processes in the public health system and methods for assessing and managing public health.

- Acquisition of skills in the analytical processing of medical data and socio-hygienic processes presented in various forms.

- Acquaintance with the latest trends and advances in computer technology in the implementation of information and analytical modeling of social and hygienic processes in health care.

Professional competencies of graduates and indicators of their achievement:

| Task type | Code and name of professional competence (result of development) | Code and name of the indicator of achievement of competence |
|-----------|--|---|
| research | PC-1 Ability to calculate, evaluate and analyze indicators characterizing the activities of a medical organization, and indicators characterizing the state of public health | PC-1.1 Knows the principles of collecting and processing information PC-1.2 Can create a data matrix, code the material PC-1.3 Owns statistical methods of data processing, including using information and analytical systems and the information and telecommunication network "Internet" |

| Code and name of the indicator of achievement of competence | Name of the assessment indicator (the result of training in the discipline) |
|---|--|
| PC-1.1 Knows the principles of collecting and processing information | Knows the principles of collecting, processing, analyzing and providing information Able to collect, process, analyze and provide information in their professional activities Possesses the skill of collecting, processing, analyzing and providing information in their professional activities |
| PC-1.2 Can create a data matrix, code the material | Knows how to encode information Able to create a data matrix, conduct material coding Proficient in coding material |
| PC-1.3 Owns statistical methods of data processing, including using information and analytical systems and the information and telecommunication network "Internet" | Knows the basic methods of data processing, including using information and analytical systems and the information and telecommunications network "Internet" Ability to process and present data Owns statistical methods of data processing, including using information and analytical systems and information and telecommunications network "Internet" |

For the formation of the above competencies within the discipline "AND Information and analytical modeling of social and hygienic processes» the following methods of active / interactive learning are used: lectures - conferences, problematic lectures, visualization lectures; practical exercises - debate, round table (preparation and discussion of abstracts).

II. The complexity of the discipline and types of training sessions in the discipline

The complexity of the discipline is 2 credit units (72 academic hours).
(1 credit unit corresponds to 36 academic hours)

The types of training sessions and work of the student in the discipline are:

| Designation | Types of training sessions and work of the student |
|-------------------|--|
| Lek | Lectures |
| Lek electr. | |
| Etc | Practical lessons |
| Right electr. | |
| SR: | Independent work of the student during the period of theoretical training |
| including control | Independent work of the student and contact work of the student with the teacher during the period of intermediate certification |
| | And other types of work |

Discipline structure:

Full-time form of education.

| N o. | Section name disciplines | S e m | The number of hours by type of training sessions and work of the student | Forms of intermediate certification |
|------|--------------------------|-------|--|-------------------------------------|
| | | | | |

| | | e s t e r | Lek | lab | Etc | OK | SR | Contr ol | |
|--|---|-----------------------|-----|-----|-----|----|----|-------------|--------|
| | MODULE 1. Information and analytical modeling of social and hygienic processes in health care | 3 | 18 | | 36 | | 18 | | |
| | Total: | 3 | 18 | - | 36 | - | 18 | | offset |

III. STRUCTURE AND CONTENT OF THE THEORETICAL PART OF THE COURSE

Lectures 18 hours.

Module 1 Information and analytical modeling of social and hygienic processes in healthcare (18 hours)

Section 1. Historical, theoretical and practical aspects of information and analytical modeling of social and hygienic processes in health care (18 hours)

Topic 1. Current state and trends of information technologies in health care- 2 hours

Classification and types of information technologies. Computer technologies in medicine and public health. National project "Unified state information system in healthcare"

Topic 2 General-purpose application software packages as information technology tools- 2 hours.

Information systems in health care (goals and main areas of application). The concept and purpose of MIS. Structural-organizational and functional classification of MIS.

Topic 3. Technical support of information technologies in information and analytical modeling of social and hygienic processes in health care.

Computer technologies for intellectual support of medical and diagnostic processes. Automated workplace of a doctor-specialist. Technical, software, organizational and methodological support of the workstation

Topic 4. Statistical and graphical analysis of medical information with information and analytical modeling of social and hygienic processes in health care - 2 hours. Possibilities of computer mathematics systems for the analysis of medical information. Essence, basic concepts, principles and methods of statistics, areas of application of statistics in medicine and health care.

Topic 5. Network technologies in medicine and healthcare in the implementation of information and analytical modeling of social and hygienic processes in healthcare - 2 hours

An abstract model of a system of arbitrary nature. Physical modeling of the system. Mathematical modeling of the system. Generalized algorithm for constructing a mathematical model. Information and telecommunication technologies and Internet resources for medicine and public health; basics of telemedicine, cloud technologies

Topic 6. Purpose and tasks of social and hygienic monitoring during information and analytical modeling of social and hygienic processes in healthcare - 2 hours

Tasks of social and hygienic monitoring. Basic principles of information-analytical modeling of socio-hygienic processes. Basic terms and definitions. Stages of development. Formalized methods: matrix methods, network methods, statistical, analytical.

Topic 7. Principles and functions of information and analytical modeling of social and hygienic processes in health care. Conditions for the success of the study - 2 hours.

Systems for modeling socio-hygienic processes in healthcare. Various solutions to the problem. Stages of analysis.

Topic 8. Organizational structure and procedure for conducting information and analytical modeling of social and hygienic processes in healthcare - 2 hours

Organization principles. Structure. Collection and processing of information. Measures to improve modeling processes.

Topic 9. Security of information support during information and analytical modeling of social and hygienic processes in medicine - 2 hours.

Ensuring information security in automated information technologies. Areas of application of information-analytical modeling of social and hygienic processes in medicine.

IV. STRUCTURE AND CONTENT OF THE PRACTICAL PART OF THE COURSE AND INDEPENDENT WORK

Practical lessons

Lesson 1. Subject and methods of systems theory. Types and properties of systems (2 hours)

The subject of systems theory. Methods of systems theory. Types of systems. System properties: integrity, complexity, coherence, structure, organization, diversity. Nonlinear dynamical systems.

Lesson 2. The concept of structure in systems theory (2 hours)

Identical structures in nature. The concept of a field. Field structure according to B. Russell, its application to systems theory. The concepts of "isomorphism" and "homomorphism". Structure identity as a classification feature.

Lesson 3. Basic methods of systems theory (2 hours)

Sequence of system analysis. System analysis techniques: black box method, decomposition method, analogy method, information-analytical principle modeling. Socio-hygienic processes in medicine, evolutionary method, expert method, methods of statistical analysis of relationships.

Lesson 4. Decision making in conditions of lack of information. Solving problems for the adoption and justification of management decisions in conditions of lack of information - 2 hours.

Expected monetary value. Unconditional cash equivalent. decision tree

Lesson 5. Decision-making under uncertainty in information and analytical modeling of social and hygienic processes in medicine - 2 hours

Making and justifying managerial decisions in conditions of lack of information, when one of the players does not have a specific goal and randomly chooses the next "moves". Income (cost) matrices.

Risk matrix. Criteria: Wald, Savage, Hurwitz.

Lesson 6. Formation of indicators, objects and factors of social and hygienic monitoring during information and analytical modeling of social and hygienic processes in medicine - 2 hours.

Hierarchy. Criteria. Paired comparison matrices. Consistency coefficient. Vector of global priorities. Qualitative indicators. Their characteristic. Quantitative data. Their characteristic. The use of qualitative and quantitative data to assess the object of study.

Class 7. Data fund and software and hardware for social and hygienic monitoring during information and analytical modeling of social and hygienic processes in medicine - 2 hours

Methods for assessing and obtaining socio-hygienic monitoring data. Scientific stage. Practical stage. Scheme of information support for social and hygienic monitoring.

Lesson 8. Overview of the features of the applications of the MSOffice software package. Acquaintance with various subsystems of MIS LPU on the example of the Karelian information system. GIS architecture - 2 hours

Calendar chart. S. Johnson problem for two departments. Order distribution problem.

Lesson 9. Basic concepts of computer methods for processing medical data: concepts of data processing; computer methods of data processing in medicine;

preparation of data for analysis; preliminary data transformation (obtaining secondary, calculated indicators, grouping, ranking, etc.); data visualization - 2 hours

The procedure for conducting methods for processing the results of the study.

Lesson 10. Preliminary data analysis: calculation of the main statistical characteristics; refinement of the data structure and their division into groups; identification of probabilistic distribution laws to which the data is subject; identification of differences between groups; determining relationships between variables; preliminary choice of methods of analysis. - 2 hours.

Lesson 11. The "Morphological box" method - interactive Conducting a study using the "Morphological box" method - 2 hours

Lesson 12. Deep data analysis: approaches to the choice of analysis method; application of nonparametric methods; carrying out dispersion and regression analysis. - 2 hours

Lesson 13. Internet services. Search for necessary information on the Internet. Using Internet services in a doctor's practice - 2 hours.

Lesson 14. Schematization. Schema Goals – 2 hours

Basic principles. Schematization in methodological work. Schematization and the information world

Lesson 15. The concept of information processes, information flows and their automation. Review and classification of new information technologies. Computer technologies in medicine and public health. Modern trends in the field of CT (2 hours)

Methods, technologies, procedures and criteria for the formation of the structure of the health care system for various levels of complexity of the organization of society: at the level of individuals; at the level of various social groups; at the level of social strata; at the level of social institutions and the state as a whole.

Class 16. Informatization of healthcare. Single information space. National standards of the Russian Federation series "Health Informatization" involving information and analytical modeling of socio-hygienic processes in medicine (2 hours)

Lesson 17. System regularities as a basis for designing control mechanisms for complex social and medical systems. Quantitative methods for describing systems in healthcare using information and analytical modeling of socio-hygienic processes in medicine - (2 hours)

System laws. Patterns of the systemic organization of health care. Levels of description of systems. Higher levels of systems description. Lower levels of systems description. Cybernetic approach to the description of systems

Lesson 18. Ensuring information security in automated information technologies. Threat models and information security methods. Security Techniques in Medical Information Systems (2 hours)

Control systems (ACS, ACS). Stages of management. The main types of models in the management of the system "health - public health".

Principles of building management decision-making systems in health care, examples of automated control systems for medical and biological purposes. Examples of telemetry systems, diagnostics and state management in the implementation of information and analytical modeling of social and hygienic processes in healthcare.

**Schedule for the implementation of independent work on the discipline
Schedule for the implementation of independent work on the discipline**

| No. p/n | Date/Due dates | Type of independent work | Approximate lead times | form of control |
|----------------|-----------------------|---------------------------------|-------------------------------|------------------------|
| 1 | 1-6th week | Preparation of abstracts | 6 hours | Protection |
| 2 | 7-12th week | Presentation preparation | 6 hours | Protection |
| 3 | 13th-18th week | Preparation for the test | 6 hours | offset |

Recommendations for independent work of students

The purpose of the student's independent work is to work meaningfully and independently first with educational material, then with scientific information, lay the foundations for self-organization and self-education in order to instill the ability to continuously improve their professional qualifications in the future.

The process of organizing independent work of students includes the following stages:

- preparatory (defining goals, drawing up a program, preparing methodological support, preparing equipment);
- the main one (implementation of the program, use of methods of information search, assimilation, processing, application, transfer of knowledge, fixing the results, self-organization of the work process);
- final (assessment of the significance and analysis of the results, their systematization, evaluation of the effectiveness of the program and methods of work, conclusions about the directions of labor optimization).

In the process of independent work, the student acquires the skills of self-organization, self-control, self-government, self-reflection and becomes an active independent subject of educational activity. Independent work of students should

have an important impact on the formation of the personality of a future specialist; it is planned by the student independently. Each student independently determines the mode of his work and the measure of labor expended on mastering the educational content in each discipline. He performs extracurricular work according to a personal individual plan, depending on his preparation, time and other conditions.

Independent work of students consists of preparing for practical classes, working on recommended literature, writing reports on the topic of the seminar, preparing presentations, abstracts.

The teacher offers each student individual and differentiated tasks. Some of them can be carried out in a group (for example, preparing a report and presentations on the same topic can be done by several students with a division of their duties - one prepares a scientific and theoretical part, and the second analyzes practice).

Methodological recommendations for independent work of students

As the material on the subject of the discipline is mastered, it is envisaged to carry out independent work of students to collect and process literary material to expand the field of knowledge in the discipline being studied, which allows deepening and consolidating specific practical knowledge gained in the classroom. To study and fully master the program material in the discipline, educational, reference and other literature recommended by this program, as well as specialized periodicals, are used.

In self-preparation for classes, students take notes on the material, independently study questions on the topics covered, using educational literature from the proposed list, periodicals, scientific and methodological information, databases of information networks (Internet, etc.).

Independent work consists of such types of work as studying material from textbooks, reference books, videos and presentations, as well as other reliable sources of information; preparation for the test. To consolidate the material, it is enough, turning over the abstract or reading it, to mentally restore the material. If necessary, refer to the recommended educational and reference literature, write down incomprehensible points in the questions to clarify them in the upcoming lesson.

Preparation for practical exercises. This type of independent work consists of several stages:

- 1) Repetition of the studied material. For this, lecture notes, recommended basic and additional literature are used;

- 2) Deepening knowledge on the topic. It is necessary to differentiate the available material in lectures, teaching aids in accordance with the points of the practical lesson plan. Separately write out unclear questions, terms. It is better to do

this in the margins of the lecture notes or textbook. Clarification should be carried out with the help of reference literature (dictionaries, encyclopedias, etc.);

3) Drawing up a detailed plan for a speech, or making calculations, solving problems, exercises, etc. In preparation for practical classes, students outline the material, prepare answers to the questions given on the topics of practical classes. In addition to the practical material, students independently study questions on the topics covered, using educational literature from the proposed list, periodicals, scientific and methodological information, databases of information networks (Internet, etc.).

Requirements for the presentation and presentation of the results of independent work

There are no special requirements for the presentation and presentation of the results of this independent work.

Recommendations for summarizing educational and scientific literature

Abstracting educational and scientific literature involves an in-depth study of individual scientific works, which should ensure the development of the necessary skills to work on a book. All this will contribute to the expansion of scientific horizons, increase their theoretical training, and the formation of scientific competence.

Textbooks, individual monographic studies and articles on issues provided for by the program of the academic discipline are offered for abstracting. When selecting literature on the chosen issue, it is necessary to cover the most important directions in the development of this science at the present stage. Pay special attention to those literary sources that (directly or indirectly) can assist a specialist in his practical activities. However, this section also includes works and individual studies on issues that go beyond the discipline under study. This literature is recommended to use if you want to expand your knowledge in any branch of science.

Along with literature on general issues, masters are supposed to read literature, taking into account the profile of their professional activity, obtained independently. Not all of the proposed literature is equivalent in content and volume, so a different approach to its study is possible. In one case, this may be a general abstract of several literary sources by various authors devoted to the consideration of the same issue, in another case, a detailed study and abstract of one of the recommended works or even its individual sections, depending on the degree of complexity of the issue (problematics). In order to decide what to do in each case, you should consult with the teacher.

The choice of a specific work for abstracting should be preceded by a detailed acquaintance with the list of all literature given in the curriculum of the discipline.

It is recommended that you first familiarize yourself with the selected work by viewing subtitles, highlighted texts, diagrams, tables, and general conclusions. Then it must be read carefully and thoughtfully (delving into the ideas and methods of the author), making notes along the way on a separate sheet of paper about the main provisions, key issues. After reading, you should think over the content of the article or a separate chapter, paragraph (if we are talking about a monograph) and briefly write it down. Literally, only strict definitions, formulations of laws should be written out. Sometimes it is helpful to include one or two examples in the entry to illustrate. In the event that there are incomprehensible places, it is recommended to read the following presentation,

The result of work on literary sources is an abstract.

When preparing an abstract, it is necessary to highlight the most important theoretical provisions and substantiate them independently, paying attention not only to the result, but also to the methodology used in studying the problem. Reading scientific literature should be critical. Therefore, one should strive not only to assimilate the main content, but also the method of proof, to reveal the features of different points of view on the same issue, to evaluate the practical and theoretical significance of the results of the work being reviewed. A highly desirable element of the abstract is the listener's expression of his own attitude to the ideas and conclusions of the author, supported by certain arguments (personal experience, statements of other researchers, etc.).

Abstracts of monographs, journal articles of a research nature must certainly contain, as already mentioned above, the definition of the problem and specific objectives of the study, a description of the methods used by the author, as well as the conclusions that he came to as a result of the study. The proposed literature for referencing is constantly updated.

Guidelines for writing and designing an abstract

An abstract (from Latin *refero* - I report, I report) is a summary of a practical or theoretical problem with the formulation of certain conclusions on the topic under consideration. The problem chosen by the student is studied and analyzed on the basis of one or more sources. Unlike term paper, which is a comprehensive study of the problem, the abstract is aimed at analyzing one or more scientific papers.

Goals essay writing are:

- developing students' skills to search for topical problems of modern legislation;
- developing the skills of concise presentation of the material, highlighting only the most significant points necessary to reveal the essence of the problem;

- developing the skills of analyzing the studied material and formulating one's own conclusions on the chosen issue in writing, in a scientific, literate language.

tasks essay writing are:

- to teach the student to accurately convey the opinions of the authors, on the basis of whose work the student writes his essay;

- to teach the student to correctly express his position on the problem analyzed in the abstract;

- prepare the student for further participation in scientific and practical conferences, seminars and competitions;

- help the student decide on the topic of interest to him, the further disclosure of which can be carried out when writing a term paper or diploma;

- to clarify for themselves and state the reasons for their agreement (disagreement) with the opinion of one or another author on this issue.

An abstract is a creative activity of a master student, which reproduces in its structure research activities to solve theoretical and applied problems in a certain branch of scientific knowledge. Because of this, term paper is the most important component of the educational process in higher education.

The abstract, being a model of scientific research, is an independent work in which a master's student, graduate student, applicant solves a problem of a theoretical or practical nature, applying the scientific principles and methods of this branch of scientific knowledge. The result of this scientific search may have not only subjective, but also objective scientific novelty, and therefore can be presented for discussion by the scientific community in the form of a scientific report or message at a scientific and practical conference, as well as in the form of a scientific article.

The abstract is carried out under the guidance of a supervisor and involves the acquisition of skills in building business cooperation based on ethical standards for the implementation of scientific activities. Purposefulness, initiative, disinterested cognitive interest, responsibility for the results of one's actions, conscientiousness, competence are personality traits that characterize the subject of research activities that correspond to the ideals and norms of modern science.

An abstract is an independent educational and research activity of a master student, postgraduate student and applicant. The supervisor provides advisory assistance and evaluates the process and results of activities. He provides an approximate topic of abstract papers, clarifies the problem and the topic of research together with the undergraduate, helps to plan and organize research activities, appoints the time and the minimum number of consultations. The supervisor accepts the text of the abstract for verification at least ten days before the defense.

Traditionally, a certain structure of the abstract has developed, the main elements of which, in the order of their location, are the following:

1. Title page.
2. Task.
3. Table of contents.
4. List of symbols, symbols and terms (if necessary).
5. Introduction.
6. The main part.
7. Conclusion.
8. Bibliographic list.
9. Applications.

The title page indicates: educational institution, graduating department, author, supervisor, research topic, place and year of the abstract.

The title of the abstract should be as short as possible and fully correspond to its content.

The table of contents (content) reflects the names of the structural parts of the abstract and the pages on which they are located. It is advisable to place the table of contents at the beginning of work on one page.

The presence of a detailed introduction is a mandatory requirement for the abstract. Despite the small volume of this structural part, its writing causes considerable difficulties. However, it is a well-executed introduction that is the key to understanding the entire work and testifies to the professionalism of the author.

Thus, the introduction is a very important part of the abstract. The introduction should begin with a rationale for the relevance of the chosen topic. When applied to the abstract, the concept of "relevance" has one feature. From how the author of the abstract knows how to choose a topic and how correctly he understands and evaluates this topic from the point of view of modernity and social significance, characterizes his scientific maturity and professional readiness.

In addition, in the introduction it is necessary to isolate the methodological basis of the abstract, to name the authors whose works formed the theoretical basis of the study. A review of the literature on the topic should show the author's thorough acquaintance with specialized literature, his ability to systematize sources, critically examine them, highlight the essential, determine the main thing in the current state of study of the topic.

The introduction reflects the significance and relevance of the chosen topic, defines the object and subject, purpose and objectives, and the chronological framework of the study.

The introduction ends with a statement of general conclusions about the scientific and practical significance of the topic, the degree of its study and availability of sources, and the formulation of a hypothesis.

In the main part, the essence of the problem is stated, the topic is revealed, the author's position is determined, factual material is given as an argument and for illustrations of the put forward provisions. The author needs to show the ability to consistently present the material while simultaneously analyzing it. Preference is given to the main facts, rather than small details.

The abstract ends with the final part, which is called the "conclusion". Like any conclusion, this part of the abstract plays the role of a conclusion determined by the logic of the study, which is in the form of a synthesis of the scientific information accumulated in the main part. This synthesis is a consistent, logically coherent presentation of the results obtained and their relationship with the general goal and specific tasks set and formulated in the introduction. It is here that the so-called "inferential" knowledge is contained, which is new in relation to the original knowledge. The conclusion may include suggestions of a practical nature, thereby increasing the value of theoretical materials.

So, in the Conclusion of the abstract should be: a) the conclusions on the results of the study are presented; b) theoretical and practical significance, novelty of the abstract; c) the possibility of applying the results of the study is indicated.

After the conclusion, it is customary to place a bibliographic list of used literature. This list is one of the essential parts of the abstract and reflects the independent creative work of the author of the abstract.

The list of sources used is placed at the end of the work. It is issued either in alphabetical order (by the author's last name or the title of the book), or in the order in which references appear in the text of the written work. In all cases, the full title of the work, the names of the authors or the editor of the publication, if a team of authors participated in writing the book, data on the number of volumes, the name of the city and publishing house in which the work was published, the year of publication, the number of pages are indicated.

Basic requirements for the content of the abstract

The student should use only those materials (scientific articles, monographs, manuals) that are directly related to the topic he has chosen. Distracted reasoning that is not related to the analyzed problem is not allowed. The content of the abstract should be specific, only one problem should be investigated (several are allowed, only if they are interconnected). The student must strictly adhere to the logic of presentation (start with the definition and analysis of concepts, move on to posing the problem, analyze ways to solve it and draw appropriate conclusions). The abstract should end with a conclusion on the topic.

In its structure, the abstract consists of:

1. Title page;
2. Introductions, where the student formulates a problem to be analyzed and researched;
3. The main text, in which the chosen topic is consistently revealed. Unlike a term paper, the main text of the abstract involves the division into 2-3 paragraphs without highlighting chapters. If necessary, the text of the abstract can be supplemented with illustrations, tables, graphs, but they should not "overload" the text;
4. Conclusions, where the student formulates conclusions based on the main text.
5. List of used literature. This list refers to both those sources that the student refers to when preparing the essay, and others that were studied by him when preparing the essay.

The volume of the abstract is 10-15 pages of typewritten text, but in any case should not exceed 15 pages. Spacing - 1.5, font size - 14, margins: left - 3 cm, right - 1.5 cm, top and bottom - 1.5 cm. Pages must be numbered. The paragraph indent from the beginning of the line is 1.25 cm.

The procedure for submitting the abstract and its evaluation

Abstracts are written by students during the semester within the time limits set by the teacher in a particular discipline, reported by the student and submitted for discussion. The printed version is handed over to the teacher leading the discipline.

Based on the results of the test, the student is given a certain number of points, which is included in the total number of student points scored by him during the semester. When evaluating the abstract, the correspondence of the content to the chosen topic, the clarity of the structure of the work, the ability to work with scientific literature, the ability to pose a problem and analyze it, the ability to think logically, knowledge of professional terminology, literacy of design are taken into account.

Guidelines for preparing presentations

To prepare a presentation, it is recommended to use: PowerPoint, MS Word, Acrobat Reader, LaTeX beamer package. The simplest presentation program is Microsoft PowerPoint. To prepare the presentation, it is necessary to process the information collected when writing the abstract.

The sequence of preparation of the presentation:

1. Clearly state the purpose of the presentation.
2. Determine what will be the format of the presentation: live performance (then how long will it be) or email (what will be the context of the presentation).

3. Select all the content for the presentation and build a logical chain of presentation.

4. Identify key points in the content of the text and highlight them.

5. Determine the types of visualization (pictures) to display them on slides in accordance with the logic, purpose and specifics of the material.

6. Choose the design and format the slides (the number of pictures and text, their location, color and size).

7. Check the visual perception of the presentation.

Visualization types include illustrations, images, diagrams, tables. An illustration is a representation of a real-life visual range. Images, unlike illustrations, are metaphors. Their purpose is to evoke emotion and create an attitude towards it, to influence the audience. With the help of well-thought-out and presented images, information can remain in a person's memory for a long time. Diagram - visualization of quantitative and qualitative relationships. They are used to convincingly demonstrate data, for spatial reasoning in addition to logical reasoning. A table is a concrete, visual and accurate display of data. Its main purpose is to structure information, which sometimes makes it easier for the audience to perceive the data.

Practical Tips for Preparing a Presentation

- printed text + slides + handouts are prepared separately;
- slides - a visual presentation of information, which should contain a minimum of text, a maximum of images that carry a semantic load, look clear and simple;
 - textual content of the presentation - oral speech or reading, which should include arguments, facts, evidence and emotions;
 - recommended number of slides 17-22;
 - obligatory information for the presentation: topic, surname and initials of the speaker; message plan; brief conclusions from what has been said; list of sources used;
 - handouts - should provide the same depth and scope as a live performance: people trust what they can carry with them more than disappearing images, words and slides are forgotten, and handouts remain a constant tangible reminder; it is important to hand out handouts at the end of the presentation; handouts should be different from slides, should be more informative.

Abstract Evaluation Criteria

The stated understanding of the abstract as a holistic author's text determines the criteria for its evaluation: the novelty of the text; the validity of the choice of source; the degree of disclosure of the essence of the issue; compliance with formatting requirements.

Text novelty:a) the relevance of the research topic; b) novelty and independence in posing the problem, formulating a new aspect of a well-known problem in establishing new connections (interdisciplinary, intradisciplinary, integration); c) the ability to work with research, critical literature, systematize and structure the material; d) the manifestation of the author's position, the independence of assessments and judgments; e) stylistic unity of the text, unity of genre features.

The degree of disclosure of the essence of the issue:a) compliance of the plan with the topic of the essay; b) compliance of the content with the topic and plan of the abstract; c) completeness and depth of knowledge on the topic; d) the validity of the methods and methods of working with the material; f) the ability to generalize, draw conclusions, compare different points of view on one issue (problem).

The validity of the choice of sources:a) assessment of the literature used: whether the most famous works on the research topic were involved (including journal publications of recent years, the latest statistics, summaries, references, etc.).

Compliance with formatting requirements:a) how correctly the references to the literature used, the list of references are drawn up; b) assessment of literacy and culture of presentation (including spelling, punctuation, stylistic culture), knowledge of terminology; c) compliance with the requirements for the volume of the abstract.

The reviewer should clearly articulate remarks and questions, preferably with links to the work (possible to specific pages of the work), to research and factual data that the author did not take into account.

The reviewer may also indicate:whether the student has addressed the topic before (abstracts, written works, creative works, olympiad works, etc.) and whether there are any preliminary results; how the graduate did the work (plan, intermediate stages, consultation, revision and revision of the written or lack of a clear plan, rejection of the leader's recommendations).

Students submits an abstract for review no later than a week before the defense. The teacher is the reviewer. Experience shows that it is advisable to familiarize the student with the review a few days before the defense. Opponents are appointed by the teacher from among the students. For an oral presentation, a student needs 10-20 minutes (approximately so much time answers the tickets for the exam).

Grade 5 is put, if all the requirements for writing and defending the abstract are met: the problem is identified and its relevance is justified, a brief analysis of various points of view on the problem under consideration is made and one's own position is logically stated, conclusions are formulated, the topic is fully disclosed, the volume is maintained, the requirements for external design are met, given correct answers to additional questions.

Grade 4– the basic requirements for the abstract and its defense are met, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material; there is no logical sequence in judgments; the volume of the abstract is not maintained; there are omissions in the design; incomplete answers were given to additional questions during the defense.

Grade 3– there are significant deviations from the requirements for referencing. In particular: the topic is covered only partially; Factual errors were made in the content of the abstract or when answering additional questions; no output during protection.

Grade 2- the topic of the abstract is not disclosed, a significant misunderstanding of the problem is revealed.

Grade 1– The abstract is not submitted by the student.

The teacher offers each master individual and differentiated tasks. Some of them can be carried out in a group (for example, the preparation of a report and presentations on the same topic can be done by several students with the division of their duties - one prepares the scientific and theoretical part, and the second analyzes the practice).

Essay topics

1. History of development of socio-hygienic monitoring and implementation information and analytical modeling of social and hygienic processes in healthcare.

2. Systemic characteristics of scientific research in the course of socio-hygienic monitoring using information-analytical modeling of socio-hygienic processes in medicine.

3. Principles of practical and scientific approach in social and hygienic monitoring using information and analytical modeling of social and hygienic processes in health care.

4. The main methods of socio-hygienic monitoring using information-analytical modeling of socio-hygienic processes in medicine.

5. Formation of databases during social and hygienic monitoring using information and analytical modeling of social and hygienic processes in medicine.

6. The importance of socio-hygienic monitoring in the activities of health authorities and medical organizations using information and analytical modeling of socio-hygienic processes in medicine.

7. Indicators and criteria for the activities of health authorities and medical organizations in the conduct of social and hygienic monitoring using information and analytical modeling of social and hygienic processes in medicine.

8. Methods and means of using the results of social and hygienic monitoring in making managerial decisions in the activities of healthcare institutions using information and analytical modeling of social and hygienic processes in medicine.

9. Evaluation of the effectiveness of decisions under conditions of uncertainty and risk using information and analytical modeling of social and hygienic processes in medicine.

10. Methods and tools for hygienic diagnostics in the healthcare system using information and analytical modeling of social and hygienic processes in medicine.

11. The study of relationships in the "population-environment-health" system using information and analytical modeling of social and hygienic processes in medicine.

12. Scientific research in assessing the impact of environmental factors on the health of the population using information and analytical modeling of social and hygienic processes in medicine.

V. EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' INDEPENDENT WORK

Independent work is defined as an individual or collective learning activity carried out without the direct guidance of a teacher, but according to his instructions and under his control. Independent work is a cognitive learning activity, when the sequence of a student's thinking, his mental and practical operations and actions depends and is determined by the student himself.

Independent work of students contributes to the development of independence, responsibility and organization, a creative approach to solving problems at the educational and professional levels, which ultimately leads to the development of the skill of independent planning and implementation of activities.

The purpose of independent work of students is to master the necessary competencies in their field of study, experience in creative and research activities.

Forms of independent work of students:

- work with basic and additional literature, Internet resources;
- self-acquaintance with the lecture material presented on electronic media in the library of an educational institution;
- preparation of abstract reviews of sources of periodicals, reference notes, predetermined by the teacher;
- search for information on the topic with its subsequent presentation to the audience in the form of a report, presentations;
- preparation for the implementation of classroom control work;

- performance of home control works;
- performance of test tasks, problem solving;
- drawing up crossword puzzles, schemes;
- preparation of reports for presentation at a seminar, conference;
- filling out a workbook;
- essay writing, term paper;
- preparation for business and role-playing games;
- compiling a resume;
- preparation for tests and exams;
- other kinds activities, organized And carried out educational institution and student self-government bodies.

IV. CONTROL OF ACHIEVEMENT OF COURSE OBJECTIVES

| No. p / p | Controlled modules / sections / topics of the discipline | Codes and stages of formation of competencies | | Appraisal tools - name | |
|-----------|--|---|---|------------------------|----------------------------|
| | | | | current control | intermediate certification |
| 1 | MODULE 1.Information-analytical modeling of social and hygienic processes in healthcare | PC-1 | Knows and is able to creatively adapt the achievements of foreign science, technology and education to domestic practice, generate ideas in scientific and professional activities, conduct scientific discussion, to free scientific and professional communication in a foreign language environment readiness to organize and conduct scientific research, including the choice of goals and formulation of tasks, planning, selection of adequate methods, collection, processing, analysis of data and their public presentation, taking into account information security requirements | Interview, abstract | offset Questions 1-19 |

VII. REFERENCES AND INFORMATION AND METHODOLOGICAL SUPPORT OF THE DISCIPLINE

Main literature

1. Applied system analysis. Study guide: study guide / F.P. Tarasenko. - Moscow: KnoRus, 2019. - 321 p. - ISBN 978-5-406-06563-1. <https://www.book.ru/book/929657>

2. System analysis in management: textbook. allowance / O.V. Bulygin, A.A. Emelyanov, N.Z. Emelyanova, A.A. Kukushkin; ed. Dr. Econ. sciences, prof. A.A. Emelyanov. - 2nd ed., revised. and additional - M. : FORUM : INFRA-M, 2018. - 450 p. - (Higher education). - www.dx.doi.org/10.12737/textbook_5923d5ac7ec116.40684446. - Access mode: <http://znanium.com/catalog/product/939889>

3. Theory of systems and system analysis: textbook. allowance / A.M. Korikov, S.N. Pavlov. - M. : INFRA-M, 2018. - 288 p. - (Higher education). - www.dx.doi.org/10.12737/904. - Access mode: <http://znanium.com/catalog/product/935445>.

4. System analysis in management: textbook. allowance / O.V. Bulygin, A.A. Emelyanov, N.Z. Emelyanova [and others]; ed. Dr. Econ. sciences, prof. A.A. Emelyanov. - 2nd ed., revised. and additional - M. : FORUM : INFRA-M, 2017. - 450 p. - www.dx.doi.org/10.12737/textbook_5923d5ac7ec116.40684446. - Access mode: <http://znanium.com/catalog/product/900361>

5. Diyazitdinova A.R. General theory of systems and system analysis [Electronic resource] / A.R. Diyazitdinova, I.B. Kordonskaya. — Electron. text data. - Samara: Volga State University of Telecommunications and Informatics, 2017. - 125 p. — 2227-8397. - Access mode: <http://www.iprbookshop.ru/75394.html>

6. Ruzavin G.I. Methodology of scientific research: Textbook for universities. – M.: UNIT-DANA, 2016. – 317 p.

7. Methods of scientific research in medicine and public health. De Poy E., Gitlin L.N.; Per. from English; Ed. V.V. Vlasov. GEOTAR-Media. 2017. 432 p.

8. Work of the Institute for System Analysis of the Russian Academy of Sciences (2012-2016).

9. System analysis, optimization and decision making: a textbook for students of higher educational institutions / V.A. Kuznetsov, A.A. Cherepakhin. — M.: COURSE: INFRA-M, 2017. — 256 p. - Access mode: <http://znanium.com/catalog/product/636142>

10. Applied Systems Analysis: textbook / F.P. Tarasenko. - Moscow: KnoRus, 2017. - 321 p. - ISBN 978-5-406-05362-1. <https://www.book.ru/book/920201>

11. System analysis in management: textbook / V.S. Kasyanov, V.N. Popov, I.P. Savchenko. - Moscow: KnoRus, 2016. - 298 p. — ISBN 978-5-406-05085-9. <https://www.book.ru/book/921600>

12. Public health and health care [Electronic resource]: textbook / Medic V.

A., Yuryev V. K. - 2nd ed., corrected. and additional - M. : GEOTAR-Media, 2016.
- 608c.<http://www.studentlibrary.ru/book/ISBN9785970437100.html>

13. Qualimetry and system analysis: Textbook / Kirillov V.I., - 2nd ed., Sr. -
M.: NITs INFRA-M, Nov. knowledge, 2014. - 440 p.: 60x90 1/16. (Binding 7BC)
ISBN 978-5-16-005464-3 - Access
mode:<http://znanium.com/catalog/product/429148>

additional literature

1. Introduction to the theory of dynamic systems: textbook for universities /
M. G. Yumagulov. St. Petersburg, Lan. - 2016. - 272
p.<http://lib.dvfu.ru:8080/lib/item?id=chamo:777259&theme=FEFU>

2. System analysis of biomedical research: textbook for universities / E. P.
Popechitelev. Stary Oskol, TNT. - 2014. - 418
p.<http://lib.dvfu.ru:8080/lib/item?id=chamo:777135&theme=FEFU>

3. Starodubov V. I. Public health and health care. National leadership.
GEOTAR-MED. 2013. - 624 p. Access
mode:<http://www.studentlibrary.ru/book/ISBN9785970426784.html>.

4. Qualimetry and system analysis: Textbook / V.I. Kirillov. - 2nd ed., erased.
- M.: NITs Infra-M; Mn.: Nov. knowledge, 2013. - 440
p.<http://lib.dvfu.ru:8080/lib/item?id=Znanium:Znanium-390550&theme=FEFU>

5. Medic V.A., Lisitsin V.I. Public health and health care: a textbook. 4th ed.,
revised. And extra. M.: GEOTAR-Media, 2016. 496 p.

The list of resources of the information and telecommunication network "Internet", necessary for the development of the discipline

1. Patent Database and Patent Search <http://www.freepatent.ru/>
2. Internet portal for healthcare
<http://bio-x.ru/go.mail.ru/search?rf=e.mail.ru&fm=1&us=15&usln=3&usstr=health&usqid=7d41348ea69338f3&hasnavig=1&sbmt=1509229987234&q=health>
3. Research [site https://infopedia.su/4x3e87.html](https://infopedia.su/4x3e87.html);
<https://dic.academic.ru/dic.nsf/ruwiki/663252>
4. SSAU Electronic Library - <http://library.sgau.ru>
5. NEB - <http://elibrary.ru>
6. <http://edu.znate.ru/docs/3997/index-94535-6.html>
7. Student library <http://www.studmedlib.ru>
8. <http://www.rmj.ru/medjurnrus.htm>

9. Spravochno-legal system Consultant plus.
10. <http://vladmedicina.ru> Medical portal of Primorsky Krai
- eleven. <http://www.rosminzdrav.ru> Official website of the Ministry of Health of the Russian Federation
12. <http://meduniver.com> Medical site about various fields of medicine

List of information technologies and software

- Microsoft Office Professional Plus 2010;
- an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);
- 7Zip 9.20 - free file archiver with a high degree of data compression;
- ABBY FineReader 11 - software for optical character recognition;
- Adobe Acrobat XI Pro - a software package for creating and viewing electronic publications in PDF format;
- ESET Endpoint Security - comprehensive protection of workstations based on Windows OS. Virtualization support + new technologies;
- WinDjView 2.0.2 is a program for recognizing and viewing files with the same name format DJV and DjVu.

VIII. METHODOLOGICAL INSTRUCTIONS FOR MASTERING THE DISCIPLINE

The practical part of the discipline "Information-analytical modeling of social and hygienic processes» is revealed in practical classes, where the teacher gives the basic concepts of discipline and the implementation of independent work on the discipline.

Practical classes of the course are held in all sections of the curriculum. Practical work is aimed at developing students' skills of independent research work. During practical classes, the master performs a set of tasks that allows you to consolidate the material on the topic under study.

The active consolidation of theoretical knowledge, carried out as a result of independent study of the material, is facilitated by the discussion of the problematic aspects of the discipline in the form of practical exercises using active learning methods. At the same time, the development of skills of independent research activity in the process of working with scientific literature, periodicals, the formation of the ability to reasonably defend one's point of view, listen to others, answer questions, and lead a discussion take place.

Lecture classes are focused on highlighting the main topics in each section of the course and are designed to orient students in the proposed material, lay the scientific and methodological foundations for further independent work of students.

Particularly significant for the professional training of students is independent work on the course. In the course of this work, students select the necessary material on the issue under study and analyze it. Independent work with literature includes such techniques as drawing up a plan, theses, abstracts, annotating sources, writing tests.

Students need to be introduced to the main sources, without which it is impossible to fully understand the issues of the course. Therefore, these sources are recommended for students to study at home and are included in the program.

Mastering the course should contribute to the development of skills for reasonable and independent assessments of facts and scientific concepts. Therefore, in all forms of knowledge control, especially when passing a test, attention should be paid to understanding the main problem field, to the ability to critically use its results and conclusions.

In the process of teaching discipline The following methods of active/interactive learning are used:

Lectures:

1. Problem lecture.

The lecture begins with the teacher posing problems that are solved in the course of presenting the material. The answer to the problem requires thinking of the entire audience. During the lecture, students' thinking occurs with the help of the teacher creating a problem situation before they receive all the necessary information that constitutes new knowledge for them. Thus, students independently try to find a solution to the problem situation.

Educational problems are available according to their difficulty for students, they take into account the cognitive capabilities of students, proceed from the subject being studied and are significant for the assimilation of new material and personal development - general and professional.

The problem lecture provides creative assimilation by future specialists of the principles and patterns of the studied science, activates the educational and cognitive activity of students, their independent classroom and extracurricular work, the assimilation of knowledge and their application in practical classes.

Practical lessons focused on the most fundamental and problematic issues and are designed to stimulate the development of their own position on these topics.

In working with students, a variety of means, forms and methods of teaching (information-developing, problem-search) are used: the method of scientific

discussion, a conference or a round table, an analysis of specific educational situations (case study).

Conference or round table

When using this method, you can invite various specialists involved in the study of the problem under consideration or working on a topic studied by students. These can be scientists, economists, artists, representatives of public organizations, government agencies, etc.

Before such a meeting, the teacher invites students to put forward a problem of interest to them on this topic and formulate questions for their discussion. If students find it difficult, the teacher can suggest a number of problems and, together with the students, choose a more interesting one for them. Selected questions are transferred to the invited expert of the round table to prepare for the presentation and answers. At the same time, several specialists involved in the study of this problem can be invited to the "round table". In order for the round table meeting to be active and interested, it is necessary to encourage listeners to exchange views and maintain an atmosphere of free discussion.

When applying all these forms of classes, students get a real practice of formulating their point of view, comprehending the system of argumentation, that is, turning information into knowledge, and knowledge into beliefs and views.

The collective form of interaction and communication teaches students to formulate thoughts in a professional language, to speak orally, to listen, hear and understand others, to argue correctly and reasonably. Joint work requires not only individual responsibility and independence, but also self-organization of the work of the team, exactingness, mutual responsibility and discipline. At such seminars, the subject and social qualities of a professional are formed, the goals of training and educating the personality of a future specialist are achieved.

The features of collective mental activity are that there is a rigid dependence of the activity of a particular student on a fellow student; it helps to solve the psychological problems of the team; there is a "transfer" of action from one participant to another; self-management skills develop.

There are various forms of organizing and conducting this type of training, such as a press conference.

At the previous lesson, the teacher gives the task to students to individually answer the questions of the practical lesson and collectively discuss options for solving the same situation, which significantly deepens the experience of the trainees. Faced with a specific situation, the student must determine whether there is a problem in it, what it consists of, determine their attitude to the situation. At the same time, each student must, by getting used to the role of specific historical figures, analyze the causes, course and results of the events. The practical lesson

begins with an introductory speech by the teacher, in which the problems for discussion are voiced. As the discussion proceeds, each of the students has the opportunity to get acquainted with the solutions, listen and weigh their many assessments, additions, changes, enter into a dialogue and discussion.

As the questions of the practical lesson are discussed, the analytical abilities of the trainees develop, contribute to the correct use of the information at their disposal, develop independence and initiative in decisions.

At the final stage of the lesson, the teacher, correcting the conclusions on the performances of students, draws general conclusions for each practical task and the overall result for the entire lesson.

Method of scientific discussion

The academic group is divided into two subgroups - generators and critics of ideas. Three more people stand out - expert analysts.

The practical lesson is implemented in four stages:

The first is preparatory (carried out 1-2 weeks before the practical session). The teacher instructs about the purpose, content, nature, rules of participation in the game. Student preparation includes:

- determination of the purpose of the lesson, specification of the educational task;
- planning the general course of the lesson, determining the time of each stage of the lesson;
- development of criteria for evaluating the proposals and ideas received, which will make it possible to purposefully and meaningfully analyze and summarize the results of the lesson.

Mutual criticisms and evaluations are strictly prohibited; they hinder the emergence of new ideas. You should refrain from actions, gestures that may be misinterpreted by other participants in the session. No matter how fantastic or incredible the idea put forward by any of the participants in the session, it should be met with approval. The more proposals put forward, the greater the likelihood of a new and valuable idea.

The second - the lesson begins with the fact that the generators of ideas quickly and clearly characterize the ruler, the situation in the country and express all proposals for solving the named problem;

Third - critics of ideas "attack" - select the most valuable, progressive of them, analyze, evaluate, criticize and include in the list of relevant assumptions that provide a solution to the problem;

Fourth - experts analyze and evaluate the activities of both subgroups, the significance of the ideas put forward.

The goal of the teacher is to organize collective mental activity to find non-traditional ways to solve problems, when discussing controversial issues, hypotheses, problematic or conflict situations.

When writing essays, it is recommended to independently find literature for it. The abstract reveals the content of the problem under study. Working on an essay helps to deepen the understanding of individual issues of the course, form and defend one's point of view, acquire and improve the skills of independent creative work, and conduct active cognitive work.

An interview and a survey are conducted to conduct ongoing monitoring and intermediate certification. To prepare for the test, a list of questions is provided in Appendix 2.

When writing essays, it is recommended to independently find literature for it. The abstract reveals the content of the problem under study. Working on an essay helps to deepen the understanding of individual issues of the course, form and defend one's point of view, acquire and improve the skills of independent creative work, and conduct active cognitive work.

IX. LOGISTICS AND TECHNICAL SUPPORT OF THE DISCIPLINE

The material and technical support for the implementation of the discipline includes classrooms for lectures and practical classes, equipped with multimedia support and corresponding to sanitary and contrary rules and regulations.

In order to provide special conditions for the education of people with disabilities and people with disabilities in FEFU, all buildings are equipped with ramps, elevators, lifts, specialized places equipped with toilets, information and navigation support signs.

| Name of special rooms and rooms for independent work | Equipment special rooms and rooms for independent work | List of licensed software. Details of the supporting document |
|--|--|---|
| 690922, Primorsky Territory, Vladivostok, Russian Island, Saperny Peninsula, Ayaks village, 10, School of Biomedicine, room M 422, area 158.6 m ² | Multimedia Audience: Motorized Screen 236*147cm Trim Screen Line; Projector DLP, 3000 ANSI Lm, WXGA 1280x800, 2000:1 EW330U Mitsubishi; document camera CP355AF Avervision, video camera MP-HD718 Multipix; Subsystem of specialized equipment fastenings CORSA-2007 Tuarex; Video switching subsystem: Audio switching and sound amplification subsystem: power amplifier, wireless LAN based on 802.11a/b/g/n 2x2 MIMO(2SS) access points. | |
| 690922, Primorsky Territory, Vladivostok, Russian Island, | Multimedia Audience: Motorized Screen 236*147cm | |

| | | |
|--|---|--|
| <p>Saperny Peninsula, Ayaks village, 10, School of Biomedicine, room M 419, area 74.9 m²</p> | <p>Trim Screen Line; Projector DLP, 3000 ANSI Lm, WXGA 1280x800, 2000:1 EW330U Mitsubishi; document camera CP355AF Avervision, video camera MP-HD718 Multipix; Subsystem of specialized equipment fastenings CORSA-2007 Tuarex; Video switching subsystem: Audio switching and sound amplification subsystem: power amplifier, wireless LAN based on 802.11a/b/g/n 2x2 MIMO(2SS) access points.</p> | |
| <p>690922, Primorsky Territory, Vladivostok, Russian Island, Saperny Peninsula, Ayaks settlement, 10, room M612, area 47.2 m²</p> | <p>Computer class for 22 workplaces: HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, W, usb kbd/ mse, Win7Pro(64-bit)+Win8.1Pro(64-bit), 1-1-1 Wty (25 pcs.)</p> | |
| <p>Reading rooms of the FEFU Scientific Library with open access to the fund (building A - level 10)</p> | <p>HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, BT, usb kbd/ mse, Win7Pro (64-bit)+Win8.1Pro(64-bit), 1-1-1 Wty Internet access speed 500 Mbps. Workplaces for people with disabilities are equipped with Braille displays and printers; equipped with: portable devices for reading flat-print texts, scanning and reading machines, a video enlarger with the ability to regulate color spectra; magnifying electronic loupes and ultrasonic markers</p> | |

IX. VALUATION FUNDS

FOS passport

Professional competencies of graduates and indicators of their achievement:

| Task type | Code and name of professional competence (result of development) | Code and name of the indicator of achievement of competence |
|-----------|--|---|
| research | PC-1 Ability to calculate, evaluate and analyze indicators characterizing the activities of a medical organization, and indicators characterizing the state of public health | PC-1.1 Knows the principles of collecting and processing information PC-1.2 Can create a data matrix, code the material PC-1.3 Owns statistical methods of data processing, including using information and analytical systems and the information and telecommunication network "Internet" |

| Code and name of the indicator of achievement of competence | Name of the assessment indicator (the result of training in the discipline) |
|---|--|
| PC-1.1 Knows the principles of collecting and processing information | Knows the principles of collecting, processing, analyzing and providing information Able to collect, process, analyze and provide information in their professional activities Possesses the skill of collecting, processing, analyzing and providing information in their professional activities |
| PC-1.2 Can create a data matrix, code the material | Knows how to encode information Able to create a data matrix, conduct material coding Proficient in coding material |
| PC-1.3 Owns statistical methods of data processing, including using information and analytical systems and the information and telecommunication network "Internet" | Knows the basic methods of data processing, including using information and analytical systems and the information and telecommunications network "Internet" Ability to process and present data Owns statistical methods of data processing, including using information and analytical systems and information and telecommunications network "Internet" |

Monitoring the achievement of course goals

| No. p / p | Controlled modules / sections / topics of the discipline | Codes and stages of formation of competencies | | Appraisal tools - name | |
|-----------|--|---|---|------------------------|----------------------------|
| | | | | current control | intermediate certification |
| 1 | MODULE 1. Information-analytical modeling of social and hygienic processes in healthcare | PC-1 | Knows and is able to creatively adapt the achievements of foreign science, technology and education to domestic practice, generate ideas in scientific and professional activities, conduct scientific discussion, to free scientific | Interview, abstract | offset Questions 1-19 |

| | | | | | |
|--|--|--|---|--|--|
| | | | and professional communication in a foreign language environment readiness to organize and conduct scientific research, including the choice of goals and formulation of tasks, planning, selection of adequate methods, collection, processing, analysis of data and their public presentation, taking into account information security requirements | | |
|--|--|--|---|--|--|

Criteria for evaluating the performance of independent work

Evaluation of independent work is carried out according to the following criteria:

- the completeness and quality of the tasks performed;
- possession of methods and techniques of computer modeling in the issues under study, the use of software tools;
- the quality of the report design, the use of rules and standards for the design of text and electronic documents;
- use of data from domestic and foreign literature, Internet sources, regulatory information and best practices;
- absence of factual errors related to understanding the problem.

When evaluating the knowledge of masters, not only the amount of knowledge is taken into account, but, first of all, the quality of assimilation of the material, understanding the logic of the academic discipline, the ability to freely, competently, logically present what has been learned is evaluated, the ability to reasonably defend one's own point of view.

“Excellent” marks the answer to independent tasks, in which the material is systematically, logically and consistently presented.

The “good” rating implies knowledge of the material and the ability to draw independent conclusions, comment on the material presented; answer with minor flaws.

Assimilation of the material is assessed as "satisfactory" when the student has not studied some sections deeply enough, allows fuzzy formulations, and gives incomplete answers.

"Unsatisfactory" is put in the case when the student does not know a significant part of the educational material, makes significant mistakes; knowledge is unsystematic.

II. Evaluation tools for current certification

Abstract Evaluation Criteria

- 100-86 points are given to the student if the student expressed his opinion on the formulated problem, argued it, accurately defining its content and components. The data of domestic and foreign literature, statistical information, information of a regulatory nature are given. The student knows and owns the skill of independent research work on the research topic; methods and techniques for analyzing the theoretical and / or practical aspects of the area under study.

- 85-76 - points - the work is characterized by semantic integrity, coherence and consistency of presentation; no more than 1 mistake was made when explaining the meaning or content of the problem. For argumentation, data of domestic and foreign authors are given. Demonstrated research skills and abilities. There are no actual errors related to understanding the problem.

- 75-61 points - the student conducts a fairly independent analysis of the main stages and semantic components of the problem; understands the basic foundations and theoretical justification of the chosen topic. The main sources on the topic under consideration are attracted. No more than 2 errors were made in the sense or content of the problem.

- 60-50 points - if the work is a retold or completely rewritten source text without any comments or analysis. The structure and theoretical component of the topic is not disclosed. Three or more than three errors were made in the semantic content of the problem being disclosed.

Competence level assessment scale

| Code and wording of competence | Stages of competence formation | | Criteria | Indicators | Points |
|--|--------------------------------|---|--|--|--------|
| PC-1 The ability to calculate, evaluate and analyze indicators characterizing the activities of a medical | Knows | principles for organizing applied and practical projects and other activities for the study and modeling of social, economic, epidemiological and other | knows modern organizations of applied and practical projects and other activities for the study and modeling | knowledge and use in practical work of the principles of organizing applied and practical projects to study social, economic and anti-epidemic | 65-71 |

| | | | | | |
|---|------|---|--|---|--------|
| organization, and indicators characterizing the state of health of the population | | conditions that affect the health and quality of life of the population | | conditions that affect public health | |
| | Can | carry out applied and practical projects and other activities to study and model social, economic, epidemiological and other conditions that affect the health and quality of life of the population | apply applied and practical projects and other activities to study the conditions that affect the health and quality of life of the population | apply in practice practical projects and other activities to study the conditions that affect the health and quality of life of the population | 71-84 |
| | owns | skills in organizing applied and practical projects and other activities to study and model social, economic, epidemiological and other conditions that affect the health and quality of life of the population | is able to organize practical projects to identify conditions that affect the health status and quality of life of the population | owns the principles of organizing applied and practical projects and other activities to study the conditions and risk factors that affect the health and quality of life of the population | 85-100 |

Methodological recommendations that determine the procedures for evaluating the results of mastering the discipline

Current certification of students.It is carried out in accordance with the local regulations of the Far Eastern Federal University and is mandatory. It is carried out in the form of control measures: the defense of a test, an interview to assess the actual results of students' learning and is carried out by a leading teacher.

The objects of assessment are:

- academic discipline (activity in the classroom, the timeliness of the implementation of various types of tasks, attendance at all types of classes in the discipline being certified);
- the degree of assimilation of theoretical knowledge (survey);
- the level of mastery of practical skills and abilities in all types of educational work (colloquium);
- results of independent work.

Intermediate certification of students.It is carried out in accordance with the local regulations of the Far Eastern Federal University and is mandatory. Provides for the accounting of the results of all stages of the development of the

course. Provided that two stages of the current attestation have been successfully passed, the student is given an intermediate attestation (test, exam).

Test and examination materials. When assessing students' knowledge, intermediate control takes into account the amount of knowledge, the quality of their assimilation, understanding the logic of the academic discipline, the place of each topic in the course. The ability to freely, competently, logically coherently present what has been studied, the ability to reasonably defend one's own point of view are assessed.

Certification students in the discipline "Information-analytical modeling of social and hygienic processes» is carried out in accordance with the local regulations of the FEFU in the form of a test.

Evaluation tools for certification

Questions for offset

1. Historical aspects of scientific medical research in SGM using information and analytical modeling of social and hygienic processes in healthcare.

2. What are the goals and objectives of the SGM using information and analytical modeling of social and hygienic processes in healthcare?

3. What are the principles of functioning of the SGM using information and analytical modeling of social and hygienic processes in healthcare?

4. What are the functions of the SGM system using information and analytical modeling of social and hygienic processes in healthcare?

5. Describe the organizational structure of the SHM using information and analytical modeling of social and hygienic processes in healthcare

6. What is the content of the SGM data funding and information and analytical modeling of social and hygienic processes in healthcare?

7. What are the principles of forming an automated database using information and analytical modeling of social and hygienic processes in healthcare.

8. What is the epidemiological analysis in the SHM system using information and analytical modeling of social and hygienic processes in healthcare?

9. What are the methodological solutions for hygienic diagnostics using information and analytical modeling of social and hygienic processes in healthcare?

10. What is the procedure for interaction between subjects and users of the SGM using information and analytical modeling of social and hygienic processes in healthcare?

11. What is the financing of the SHM system using information and analytical modeling of social and hygienic processes in healthcare.

12. Basic research methods in SGM using information and analytical modeling of social and hygienic processes in healthcare.

13. Classification of resources in the preparation and implementation of research programs in the SGM using information and analytical modeling of social and hygienic processes in healthcare.

14. Criteria and performance indicators of SGM with the use of information and analytical modeling of social and hygienic processes in healthcare.

15. Basic methods for assessing the effectiveness of SGM using information and analytical modeling of social and hygienic processes in healthcare.

16. Features of research programs in health care using information and analytical modeling of social and hygienic processes in healthcare.

17. Application of research programs to improve the effectiveness of SHM using information and analytical modeling of social and hygienic processes in healthcare.

18. The main directions of scientific research in accordance with the message of the President, the Decree of the Government, the Ministry of Health of the Russian Federation.

19. Main scientific programs and tasks for the needs of regional health care in the management of SHM using information and analytical modeling of social and hygienic processes in healthcare.

Criteria for grading a student in the test

| Credit score | Requirements for the formed competencies |
|---------------|--|
| "passed" | The grade "passed" is given to the student if he knows the material well, presents it competently and to the point, avoids significant inaccuracies in answering the question, correctly applies the theoretical provisions in solving practical issues and tasks, possesses the necessary skills and techniques for their implementation |
| "not counted" | The "failed" mark is given to a student who does not know a significant part of the program material, makes significant mistakes, uncertainly, with great difficulty answers the questions posed. As a rule, the "failed" mark is given to students who cannot continue their studies without additional classes in the relevant discipline. |

Control tests designed for students studying the course "Information-analytical modeling of social and hygienic processes".

When working with tests, it is proposed to choose one answer option from three to four offered. At the same time, the tests are not the same in their complexity.

Among the proposed there are tests that contain several options for correct answers. The student must indicate all the correct answers.

Tests are designed for both individual and collective decision. They can be used in both classroom and self-study. The selection of tests necessary for the control of knowledge in the process of intermediate certification is made by each teacher individually.

Ttest tasks

1. An active participant in the directed activity will be called:

- 1) subject;
- 2) an observer;
- 3) an object.

2. Model is:

- 1) simplified similarity of the object;
- 2) object of influence;
- 3) an economic phenomenon.

3. Mathematical model:

- 1) description of material objects;
- 2) a system of relations describing the process under study, or phenomenon;
- 3) conscientious description of something.

4. Perturbations are:

- 1) controlled variables;
- 2) uncontrolled variables;
- 3) controlled variables.

5. The system is:

- 1) an ordered representation of the object of study in terms of the goal set;
- 2) measure of quantitative description;
- 3) the side of the object, causing its difference or similarity with other objects.

6. Subsystem is:

- 1) a system that is an element of this system;
- 2) a set of homogeneous elements of the system;
- 3) an object that performs certain functions.

7. The structure of the system is:

- 1) a kind of feedback;
- 2) an object that influences the results of functioning;
- 3) stable ordering in space and time of its elements and connections between them.

8. Methods for constructing a mathematical model are:

- 1) analytical and statistical;
- 2) object and identification;
- 3) structural and graphic.

9. Extrapolation is:

- 1) dissemination of the results of observations obtained over one part of the phenomenon, to another part of it;
- 2) a naturally arising question about the causes of changes;
- 3) non-stationary system.

10. A system whose state practically does not change during a certain period of its existence is called:

- 1) dynamic system;
- 2) static system;
- 3) internal system.

11. The process of processing input information into output is called:

- 1) the functioning of the system;
- 2) the state of the system;
- 3) coefficient of the system.

12. A system in which some element plays the main, dominant role in the functioning of the system is called:

- 1) the leading part of the system;
- 2) decentralized system;
- 3) centralized system.

13. If among the free members of the system there are other than 0, then the system is called:

- 1) homogeneous;
- 2) heterogeneous;
- 3) joint.

14. A system that has at least one solution is called:

- 1) homogeneous;
- 2) heterogeneous;
- 3) joint.

15. A homogeneous system will always be:

- 1) joint;
- 2) incompatible;
- 3) indefinite.

16. If two systems have the same set of solutions, then such systems are called:

- 1) homogeneous;

- 2) joint;
- 3) equivalent.

17. Consideration of the system in terms of its behavior in the environment to achieve goals is called:

- 1) system-functional approach;
- 2) system-elemental approach;
- 3) system-structural approach.

18. Strict scientific knowledge about the world of systems and an explanation of the origin of the device and the functioning of systems of various nature is called:

- 1) system theory;
- 2) system analysis;
- 3) system method.

Test Evaluation Criteria

The results of the test tasks are evaluated by the teacher on a five-point scale for attestation or according to the "pass" - "fail" system. The grade "excellent" is given with the correct answer to more than 90% of the tests proposed by the teacher. Rating "good" - with the correct answer to more than 70% of the tests. Grade "satisfactory" - with the correct answer to 50% of the proposed tests.