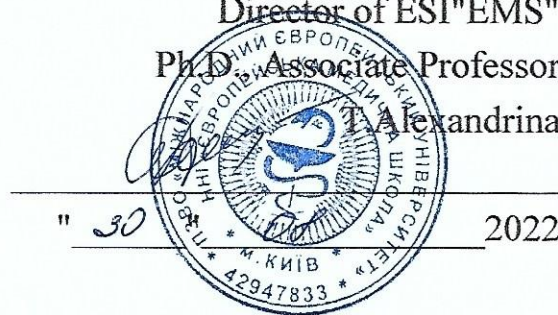


**INTERNATIONAL EUROPEAN UNIVERSITY  
EDUCATIONAL AND SCIENTIFIC INSTITUTE  
"EUROPEAN MEDICAL SCHOOL"**

APPROVED

Director of ESI"EMS"

Ph.D. Associate Professor  
Alexandrina



**COURSE TRAINING PROGRAM**

on

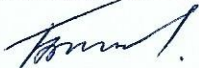
**SOCIAL MEDICINE, ORGANIZATION AND ECONOMICS OF  
HEALTH CARE**

<b>Degree level</b>	Master
<b>Field of study</b>	22 "Health care"
<b>Specialty</b>	222 "Medicine"

**Kyiv - 2022**

DEVELOPED AND SUBMITTED: Educational and Scientific Institute "European Medical School", Department of Fundamental and Medical and Preventive Disciplines.

Developed by: Moiseeva H.V., Doctor of Medicine, Professor of the Department of Fundamental and Medical Preventive Disciplines, Kopach K.D., Candidate of Medical Sciences, Associate Professor of the Department of Fundamental and Medical Preventive Disciplines.

Discussed and approved by the Department of Fundamental and Medical Preventive Disciplines №.1 from " 25 " 08 2022  
Head of the department Kostynskyi G.B. 

Approved at the meeting of the Scientific Council of the ESI"EMS"  
№ 1 of " 29 " 08 of 2022

## INTRODUCTION

**The study program of the academic discipline " Social medicine, organization and economics of health care "** was developed in accordance with Standard of higher education of Ukraine for training specialists of the second (master's) level, field of knowledge 22 - "Health care", specialty - 222 "Medicine", educational qualification "Master of Medicine", professional qualification "Doctor".

### **Description of the academic discipline (abstract)**

The program of study of the discipline " Social medicine, organization and economics of health care " is intended for higher medical institutions of education of Ukraine in accordance with the requirements of the credit-transfer system of the organization of the educational process of the ECTS , based on a combination of learning technologies by sections and credit assessment credits - units of measurement of educational the student's load necessary for mastering the discipline or its section.

In accordance with the curriculum for training specialists of the second (master's) level of higher education in the field of knowledge 22 "Health care", the academic discipline " Social medicine, organization and economics of health care " is taught in the 3rd, 4th and 6th years of study.

the study of the discipline " Social medicine, organization and economics of health care " , of which 168 classroom hours and 162 - independent work.

### **Information volume of the academic discipline**

Name of indicators	Field of knowledge, direction of training, educational and qualification level	Characteristics of the academic discipline		
		<b>full-time education</b>		
<b>The number of credits is 11</b>	<b>Branch of knowledge</b> 22 "Health care "	<b>Normative</b> (optional)		
	<b>Training direction</b> "Medicine"			
<b>There are 4 sections</b>	<b>Specialty:</b> 222 "Medicine"	A year of training		
<b>9 content sections</b>		3rd	4th	the 6th
<b>The total number of hours is 330</b>		Semester		
		the 6th	the 7th	the 12th
Weekly workload: classrooms - The third year of study - 3 hours, The fourth year of study - 3	<b>Education level:</b> "Master of Medicine" qualifications of a professional "doctor"	Lectures		
		8 hours	8 hours	-
		Practical		
		38 hours	38 hours	80 hours
		Individual work		
		44 hours	44 hours	7 0 h.

hours; The sixth year of study - 5 hours.		Type of control:		
		test	test	exam

The ratio of the number of hours of classroom classes to independent and individual work is 50.9% and 50.1%, respectively.

**The subject** of study of the academic discipline is modern principles of evidence-based medicine, theoretical and methodological foundations of biostatistics, laws of population health, health care system, its organization and economy.

### **Interdisciplinary connections.**

In order to successfully master the discipline, a student of higher education needs the knowledge obtained in the course of studying the following disciplines of general training: "Philosophy, ethics, deontology", "Medical informatics", " Microbiology", " Pathomorphology ", "Pathophysiology", "Hygiene and ecology". The main discipline lays the foundations for studying the organization of the medical and diagnostic process, assessing its volume and quality when studying the following clinical disciplines: " Internal Medicine", "Surgery", "Pediatrics", "Obstetrics" and gynecology" , provides the study of the legal and organizational foundations of the field of health care, contributes to the formation of the preventive direction of the activities of future doctors taking into account the possible impact on the health of the population of factors of various origins, contributes to the formation of an economic worldview and basic competence characteristics regarding the methodology of economic analysis of the activities of medical institutions in modern conditions.

### **1. The purpose and tasks of the educational discipline**

**The purpose of the educational discipline " Social medicine, organization and economics of health care "** derives from the goals of the educational and professional training program for graduates of a higher education institution and is determined by the content of those systemic knowledge and skills that a doctor must master. The knowledge that students receive from the academic discipline is basic for the block of disciplines that provide professional and practical (PP block) training.

**1.1. The purpose of teaching the academic discipline " Social medicine, organization and economics of health care "** is

- mastering the necessary knowledge, skills and acquiring competencies regarding research, analysis and evaluation of population health indicators;
- organization, resource provision and activity of the health care system, development from the standpoint of evidence-based medicine of recommendations for the prevention and elimination of the harmful effects of factors on health and for improving the organization of medical assistance to the population and the public health system.

**1.2 Main tasks of the academic discipline " Social medicine, organization and economics of health care " are:**

- mastering the theoretical foundations of biostatistics;
- mastering modern principles of evidence-based medicine;
- familiarization with methods of definition and analysis of basic biostatistical indicators and criteria;
- assimilation of methodical and theoretical bases of formation of statistical

- aggregates for their further adequate analysis;
- assimilation of the methods of definition, analysis and assessment of the main indicators of population health according to separate criteria and in relation to the factors affecting it;
  - assimilation of regularities and features of the formation of population health;
  - mastering the principles of developing measures to preserve and strengthen the health of the population and its individual contingents;
  - mastering the theoretical foundations and legal foundations of the health care system, its functions and strategic directions of development;
  - mastering the principles, directions, tasks of the public health system;
  - mastering the basics of the organization of medical care, the principles of evaluating the organization and the quality of providing various types of medical care to the population in the conditions of reforming the health care sector;
  - formation of knowledge on the issue of disability examination, its types, order of organization and actions of medical workers regarding specific situations of disability examination;
  - mastering the principles of development of management solutions aimed at improving the activities of health care institutions;
  - mastering the basics of economic analysis of the activity of a medical institution;
  - mastering the principles of analysis and evaluation of financial and economic indicators of the economic activity of medical institutions for the purpose of rational use of available resources;
  - formation of knowledge on issues of price policy, strategic and tactical planning of the economic development of a medical institution;
  - familiarization with the development of a business plan for entrepreneurial activity in the health care system.

### **1.3 Competencies and learning outcomes**

The list of graduate competencies, the formation of which contributes to the study of the discipline of the discipline " Social medicine, organization and economics of health care " and its relationship with the normative content of the training of students of higher education in the field of knowledge 22 "Health care", formulated in terms of learning outcomes in the Standard of Higher Education of Ukraine, the second (master's) level of higher education.

According to the requirements of the Standard of Higher Education of Ukraine, the second (master's) level of higher education in the discipline " Social medicine, organization and economics of health care " ensures that students acquire the following levels of competence:

<b>general competence (ZK)</b>	
<b>ZK 1</b>	Ability to abstract thinking, analysis and synthesis
<b>ZK 2</b>	Ability to learn and master modern knowledge
<b>ZK 3</b>	Ability to apply knowledge in practical situations
<b>ZK 4</b>	Knowledge and understanding of the subject area and understanding of professional activity
<b>ZK 5</b>	Ability to adapt and act in a new situation
<b>ZK 6</b>	Ability to make informed decisions
<b>ZK 7</b>	Ability to work in a team
<b>ZK 8</b>	Ability to interpersonal interaction
<b>ZK-10</b>	Ability to use information and communication technologies
<b>ZK 11</b>	Ability to search, process and analyze information from various sources
<b>ZK 12</b>	Determination and persistence in relation to assigned tasks and assumed responsibilities
<b>Professionals competence (FC)</b>	
<b>FC 4</b>	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
<b>FC 11</b>	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
<b>FC 15</b>	The ability to conduct an examination of working capacity.
<b>FC 16</b>	Ability to maintain medical documentation, including electronic forms. Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility
<b>FC 17</b>	The ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, population.
<b>FC 18</b>	The ability to analyze the activity of a doctor, unit, health care institution, ensure the quality of medical care and increase the efficiency of the use of medical resources.
<b>FC 19</b>	The ability to organize and integrate the provision of medical assistance to the population and the marketing of medical services.
<b>FC 20</b>	Ability to conduct epidemiological and medical- statistical studies of the health of the population; processing of social, economic and medical information.
<b>FC 21</b>	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
<b>FC 22</b>	Ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches.

<b>FC 23</b>	The ability to develop and implement scientific and applied projects in the field of health care
<b>FC 24</b>	Adherence to ethical principles when working with patients and laboratory animals
<b>FC 25</b>	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results
<b>Software the results teaching (PRN)</b>	
<b>PRN 1</b>	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
<b>PRN 2</b>	Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.
<b>PRN 3</b>	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
<b>PRN 16</b>	Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions, organizations and institutions; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.
<b>PRN 18</b>	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
<b>PRN 19</b>	Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.
<b>PRN 21</b>	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information
<b>PRN 22</b>	Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.
<b>PRN 23</b>	Assess the impact of the environment on human health in order to assess the morbidity of the population.
<b>PRN 24</b>	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.

<b>PRN 25</b>	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
<b>PRN 26</b>	Manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches, organize the work and professional development of personnel taking into account the acquired skills of effective teamwork, leadership positions, appropriate quality, accessibility and justice, ensuring the provision of integrated medical help
<b>PRN 27</b>	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.
<b>PRN 28</b>	Make effective decisions on health care issues, assess the necessary resources, take into account social, economic and ethical consequences.

**After completing the study of the discipline " Social medicine, organization and economics of health care ", students should know:**

- basics of statistical inference, data preparation methods, basic biostatistics and statistical data analysis;
- basic accounting documents for the study of population health indicators (demographic, morbidity, disability), activities of the main health care institutions;
- determination of health indicators, activities of health care institutions using the appropriate statistical methods learned in the study of biostatistics;
- determining the doctor's tactics in the process of examination of the loss of working capacity (temporary and permanent), filling out relevant documents, assessing the quality of medical care;
- development of management solutions aimed at improving the health of the population and optimizing medical care;
- the main strategic and tactical plans for the economic development of the medical institution;
- definition of a marketing strategy that will ensure the maximum satisfaction of the population's needs in medical care;
- determination of the price policy aimed at the implementation of the strategic and operational tasks of the medical institution;
- development of a business plan for entrepreneurial activity in the health care system;
- the basic principles of determining the insurance premium for voluntary health insurance;
- principles of determining the optimal payment method for medical service providers;
- stages of conducting an economic analysis of the activities of medical institutions and enterprises.



**After completing the study of the discipline " Social medicine, organization and economics of health care ", students should be able to:**

- analyze and evaluate the state of health of the population;
- analyze and evaluate state, social and medical information using standard approaches and computer information technologies;
- assess the impact of adverse factors on the state of health of the population (individual, family, population) in the conditions of a medical institution according to standard methods, assess risk;
- determine public health priorities, conduct needs assessment, propose science-based measures and develop appropriate strategies;
- to plan disease prevention measures among the population to prevent the spread of diseases;
- carry out advocacy, communication, and social mobilization in the field of public health using various communication channels and techniques;
- to analyze and evaluate the activity of the health care system, its legal, financial, personnel support;
- to carry out statistical, economic and financial and economic analysis of the effectiveness of health care institutions;
- develop and plan management solutions aimed at improving the activities of health care institutions;
- to organize the provision of medical services, to ensure control over the quality of the provided services at the appropriate level;
- draw up strategic and tactical plans for the economic development of the medical institution;
- draw up business projects in the field of health care;
- form goals and determine the structure of personal activity based on the result of the analysis of certain social and personal needs;
- to be aware of and be guided in their activities by civil rights, freedoms and duties, to raise the general educational cultural level.

## **2. Information volume of the academic discipline**

To study the academic discipline " Social medicine, organization and economics of health care " 11 ECTS credits are assigned, 330 hours.

The program of the academic discipline is structured and presented in 4 sections and 9 content sections, the ultimate goals of its study are the same, therefore a single end-to-end program has been compiled.

**Section 1. Biostatistics** is divided into 2 substantive sections and 24 topics.

**Section 2. Public health** is divided into 3 substantive sections and 31 topics.

**Section 3. Organization of health care** is divided into 2 substantive sections and 16 topics.

**Section 4. Health care economics** is divided into 2 substantive sections and 8 topics.

### **SECTION 1 . BIOSTATISTICS**

*Content section 1. Biostatistics . Methodical foundations organizations statistical studies.*

**Topic 1. Social medicine and public health as a science. Biostatistics as a**

**methodological basis for analysis and evaluation of the health of the population and the health care system.** Social medicine and public health is a science that studies the patterns of public health and the system of its protection. Methodology of analysis and assessment of population health. Definition of the terms "biostatistics", "evidence-based medicine", "clinical epidemiology". The main stages of the development of biostatistics. Outstanding scientists and their contribution to the development of biostatistics. Basic principles of evidence-based medicine. Triad of evidence-based medicine. Theory and practice of evidence-based medicine. Evidence-based medicine and quality of clinical research. Concept of final results. Evidence-based medicine and quality of medical care. Standardization of medical care: clinical protocols, standards and recommendations.

**Topic 2. Methodological foundations of the organization of statistical research. Data types. Methods of collecting statistical material.** Methodological foundations, forms and methods of statistical observation and data collection. Accuracy of observations. Types of data, qualitative and quantitative data. Use of different measurement scales: absolute, ordinal, interval, ratios. Methods of collecting statistical material: direct registration, copying, survey. Types of questionnaires, their characteristics. Marketing and sociological surveys, types of questions in questionnaires, problems of organizing surveys in health care.

**Topic 3. Organization and planning of statistical research.** Theory and concept of statistical observation, stages of its implementation. Planning a statistical study. The purpose and objectives of the research. Sources of statistical information. Object of research, unit of observation. Types of research by volume: selective and continuous. Concept of general and selective population. Requirements for the formation of a sample population. Types of sampling. Types of research by time: one-moment, dynamic (prospective and retrospective).

**Topic 4. Compilation of statistical research programs.** Program of statistical observation. Layout of the registration mark. Grouping of statistical data, methods, values. Types of groupings, principles of building statistical groupings and classifications. Comparison of statistical groupings. Concept of multidimensional classifications. Encoding and encryption of data. Program for the development and compilation of statistical material. Statistical tables, their characteristics, types, rules for building a table layout. Methodical basics of reading and analyzing tables.

**Topic 5. Relative values.** Concept of statistical indicators, their types, form of presentation. Absolute data, relative values, their practical significance. Types of relative quantities (intensive, extensive, relative intensity, ratio, visibility), their calculation method and methodical bases of application for data analysis. Concepts and types of structure of medical and biological data, structural changes, features of their analysis.

**Topic 6. Graphic methods of analysis.** Graphic methods of data analysis. Types of diagrams (linear, columnar, intracolumnar, sectorial, radial, cartograms and cartograms, rules for their construction, correctness of use. Modern methods of graphic representation, infographics, animation of diagrams, interactive diagrams.

**Topic 7. Average values and indicators of variation.** Average values in clinical and epidemiological studies, their practical significance. Elements and characteristics of

variational series. Average values: their types, methods of calculation, features of use. The concept of variation, its meaning. Variability of population parameters, assessment methods. Absolute indicators of variation (amplitude, mean square deviation) and relative indicators of variation (coefficients of variation and determination), their assessment. Measures of variation, concepts of distribution laws, their types, characteristics. Estimation of normality of distribution, "jumping out" options. The rule of "three sigma", its practical use.

**Topic 8. Method of standardization .** Problems of comparison of statistical indicators in heterogeneous populations. Types of standardization methods: direct, indirect, reverse. Characteristics of the stages of the standardization method. Formulation of the null hypothesis. Selection and calculation of the standard. Calculation of expected numbers. Calculation of standardized indicators. Null hypothesis testing, evaluation of results. Practical significance of the standardization method.

**Topic 9. Assessment of the probability of research results. Characteristics and analysis of statistical errors.** Assessment of the probability of the obtained results. Concept of internal and external validity. The level of significance of statistical criteria. Null and alternative hypotheses. Hypothesis testing. Error of the 1st and 2nd kind. Typical mistakes at the stages of conducting research. Random and systematic error. Average error of mean and relative value, confidence interval. Estimation of the probability of difference: Student's t-test, calculation method, its evaluation, typical errors of use. Paired and multiple comparisons. Newman-Keuls criterion, Tukey's criterion. Fisher's exact test. Peculiarities of using non-parametric criteria: Mann-Whitney, Kruskal-Wallis.

**Topic 10. Parametric methods of probability estimation.** Selective observation as a source of statistical information. Average error of mean and relative value, confidence interval. Estimation of the probability of difference: Student's t-test, calculation method, its evaluation. Peculiarities of use on small samples. Student's table.

**Topic 11. Non-parametric methods of probability estimation.** Justification of cases of use of non-parametric assessment methods, their significance. Types of compared populations, their characteristics. Analysis and evaluation of results in related populations, sign test, Wilcoxon test. Statistical hypothesis testing for independent samples. Analysis of qualitative features. Conjugation tables. Chi-square criterion, its evaluation and practical application.

**Topic 12. Correlation-regression analysis .** Studying the relationship between quantitative variables. The concept of functional and correlational connection. Strength and direction of communication. Types of correlation coefficients. Pearson's linear correlation coefficient, its evaluation, characteristics. Non-parametric methods of relationship assessment - Spearman's rank correlation coefficient. Pair and multiple correlation coefficients. Regression analysis, regression coefficient, regression equation. Using regression analysis for forecasting.

**Topic 13. Series of dynamics and their analysis.** Basic rules of construction and analysis of dynamic series when studying the dynamics of medical and biological phenomena. Series levels. Types of dynamics series: simple and complex, interval and instantaneous. The main indicators of dynamic series analysis: absolute growth,

growth/decrease rate, growth rate. The main methods of processing a dynamic series in order to determine the trend. Dynamic series alignment methods: least squares; variable mean, averaging on the left and right sides; increasing intervals. Forecasting based on extrapolation of dynamics series.

### ***Content section 2. Epidemiological research in security health***

**Topic 14. Epidemiological studies in health care, their classification. Empirical and experimental studies.** Modern concept of epidemiology. Classification of epidemiological studies. Comparative characteristics of various types of research, assessment of the degree of evidence of their results. Retrospective and prospective studies. Empirical studies (descriptive and analytical). Descriptive epidemiology: description of a single case and case series. Analytical epidemiological studies. Cohort and case-control studies.

**Topic 15. Design of epidemiological studies: case-control, cohort, randomized clinical studies.** Design of epidemiological and clinical studies. Research ethics. Types of design. Types of control. Blinding of the study. Required sample size. Selection of the object and research units. Inclusion and exclusion criteria. Concepts of randomization and stratification.

**Topic 16. Screening tests: characteristics and basic requirements. Concept of risk factors.** Screening. Assessment of screening results. Requirements for screening tests. Sensitivity and specificity of the screening test. Relationship of sensitivity and specificity. The concept of ROC analysis. Prognostic factors and risk factors, their meaning and possibilities of use. Determination of risk indicators in a case-control study. Absolute, relative and additional population risk: method of calculation and assessment. The concept of chances in epidemiology. Determination of the odds ratio indicator in a cohort study: calculation method and evaluation.

**Topic 17. Risk factors. Methodology for calculating risk indicators and their assessment.** Risk factors. Risk indicators: absolute, relative and additional population risk. Odds. Odds ratio indicator. Methodology of calculation and assessment.

**Topic 18. Screening. Methodology for assessing the sensitivity and specificity of screening tests.** Screening. Requirements for screening tests. Sensitivity and specificity of the screening test: method of calculation and assessment.

**Topic 19. Review of modern methods of statistical analysis (dispersion, multivariate, cluster ).** The concept of one-way analysis of variance (ANOVA) and multi-way analysis of variance (MANOVA). Patient survival analysis (Kaplan-Meier method). Concept of cluster analysis.

**Topic 20. Information provision of epidemiological and clinical studies. Systematic reviews and meta-analysis.** Medical information: its components, problems of information search. Databases of literature, medical libraries. Generalization of clinical research results. Analytical reviews. The concept of meta-data. Systematic reviews and meta-analysis. The Cochrane Collaboration: History and Activities.

**Topic 21. Medical statistics, the role in the analysis of the health of the population and the activity of the health care system. Electronic document management.** Medical statistics: theoretical foundations, subject and content, tasks, sections. Principles of construction and activity of the Medical and Statistical Service of

Ukraine. Center of Medical Statistics. Information flows in the system of medical statistics. Accounting documentation. Activities of information and analytical departments of health care institutions. The concept of electronic document management in health care.

**Topic 22. Databases on population health. Organization and conduct of statistical research in public health.** Databases on population health (European and domestic databases "Health for all"): design, content, capabilities. Research activity in public health in Ukraine and abroad.

**Topic 23. Use of biostatistics knowledge in the daily practice of a doctor. Statistical research software and the procedure for presenting scientific papers.** The place and role of biostatistics in medical education and the work of a practicing physician. Overview of the main packages of statistical data processing (Excel, Access, Statistica, Stata, SPSS, SAS): advantages, disadvantages, accessibility, mastery problems. Types of scientific works (thesis, article, methodological recommendations, monograph, textbook, dissertation). The order of presentation of scientific works: design, publication, speech, presentation.

**Topic 24. Basics of preparing a scientific publication.** The structure of scientific work (purpose, scope and methods, results of own research, conclusions). Peculiarities of design of scientific works (presentation of data in tables, graphic images). Rules for creating references to sources of information, list of literature.

## **SECTION 2. PUBLIC HEALTH**

### ***Content section 3. Public health, functions and services Health of the population***

**Topic 25. Public health, functions and services.** Public health as a science and subject of teaching. Basic terms and definitions, the history of the creation of the public health system. Basic operational functions of public health. Basic public health services. Modern development of the public health system in Ukraine and the world. Public health infrastructure.

**Topic 26. Epidemiological supervision and assessment of the state of health and well-being of the population.** Disease surveillance system. Monitoring of morbidity and prevalence of diseases. Registers of infectious and non-infectious diseases. Monitoring of diseases and health indicators of mothers and children, mental health, social health. Registers of environmentally caused diseases, occupationally caused diseases. Epidural supervision of injuries. Diagnosing the health of local communities, identifying gaps, inequalities in health, needs for action planning.

**Topic 27. Population health: main determinants.** Targeted approaches to defining the concept of "health": general philosophical, individual theoretical, individual practical, population. Population health as a conditional statistical concept. Methods of studying health. Population health indicators: demographic (birth rate, mortality, average life expectancy); physical development; morbidity; disability. Leading groups of factors affecting the health of the population: the level and lifestyle of people, the state of the environment, biological factors, availability and quality of medical care. Peculiarities of health of different sex-age, professional population groups. Public health strategies for health preservation.

**Topic 28. Medical and social problems of demographic processes.** Demography as a science. Sources. Dynamics of the number and composition of the

population in different regions of the world, countries and in Ukraine. Gender and age composition of the population. Natural population movement. Fertility, indicators and factors affecting fertility. Modern trends and regional characteristics of birth rates in Ukraine and the world. General mortality, its leading causes in different regions, individual countries and in Ukraine, sex-age and territorial features. Infant mortality (infant mortality). The value of the indicator for assessing the state of health of the population, the level of socio-economic well-being and the development of society. Leading causes of infant mortality. Average life expectancy, definition of the concept. Methodology for determining the indicator, its dynamics in different regions of the world, individual countries and in Ukraine.

**Topic 29. Methods of studying and evaluating the main demographic indicators of natural population movement. Analysis of the demographic situation .** Documents used to study the natural movement of the population. The procedure for registering births in Ukraine. The essence of the concepts "live birth", "stillbirth", "death of the fetus". Methods of determining and evaluating general and special birth rates. Total mortality. The procedure for registering deaths in Ukraine. Methods of studying mortality, determination of general and special indicators, their meaning and assessment. Structure of causes of mortality. Natural population growth. Population changes. Mechanical and natural population movement. Depopulation. Analysis of regional features and dynamics of demographic indicators. Assessment of the demographic situation.

**Topic 30. Analysis of the composition of the population by age, sex, place of residence.** The importance of studying the age structure of the population. The type of age structure of the population (progressive, regressive, stationary) and its changes. "Age pyramid". Gender disparity: causes and consequences. Population urbanization as a socio-economic problem.

**Topic 31. Population aging. Analysis of social security indicators and demographic burden.** Problems related to the aging of the population. The average life expectancy of the population, incl. men and women in Ukraine and the world, its dynamics. Indicator of demographic load. Labor potential of the country.

**Topic 32. Life as a value. Attitude towards death and dying as a moral problem.** Formation of attitude towards life as a human value. Psychological and spiritual support in striving for life, defining death as a natural process in old age or illness. Ensuring a dignified end to earthly life. Moral and ethical aspects of relation to natural death and euthanasia.

**Topic 33. Methods of studying and evaluating infant mortality rates.** Procedure for registration of infant (toddler) mortality. Methodology for determining indicators of general, neonatal, early neonatal, late neonatal, and post-neonatal mortality of infants. Assessment of the ratio of infant mortality and neonatal mortality. Perinatal mortality. Leading causes of infant mortality in different age periods of the first year of life. The main groups of factors affecting the formation of infant mortality levels (biological, environmental, medical and organizational, lifestyle).

**Topic 34. Methods of studying and evaluating factors affecting the health of the population.** Classification of risk factors affecting health. Methodical approaches to the study of factors that determine the level of health of the population and its separate

contingents. Peculiarities of the study of the influence of factors: socio-economic, socio-biological, ecological and natural-climatic, medical and organizational. Application of biostatistics methods (derivative and average values, standardization method, correlation-regression analysis, parametric and non-parametric assessment of the probability of research results, point, rating assessment).

#### ***Content section 4. Morbidity of the population***

**Topic 35. Morbidity of the population as a medical and social problem.** The concept of morbidity, the purpose of its study, peculiarities in Ukraine and the world. Medico-social significance of morbidity as a leading cause of temporary and permanent disability, mortality. The impact of morbidity on the needs of the population in providing medical care, on the health of future generations. Economic costs associated with morbidity, incl. with incidence of socially significant and dangerous diseases. Methods of studying morbidity, possibilities of using individual methods, their advantages and disadvantages. Factors affecting the completeness of data on morbidity depending on the methods of its study. International statistical classification of diseases, injuries and causes of death, principles of its construction and significance. Types of morbidity studied in Ukraine. Differences in morbidity rates of urban and rural populations, different age and gender groups. Disability as an indicator of population health, its medical and social significance.

**Topic 36. Methods of study and assessment of indicators of general morbidity.** Study of morbidity based on requests for medical assistance. Methodology for determining indicators of primary morbidity and prevalence of diseases, their evaluation. Dynamics of indicators of general and primary morbidity, regional features.

**Topic 37. Methodology of study and assessment of incidence rates for the most important socially significant diseases.** Diseases of the circulatory system, oncological, neuropsychiatric diseases, diabetes, tuberculosis, HIV infection/AIDS, trauma, alcoholism, drug addiction and toxic addiction as medical and social problems. Leading factors affecting the prevalence of diseases. Dynamics of the main indicators. Trauma as a medical and social problem, types of trauma, accounting of cases, dynamics of indicators, age and sex characteristics in regions of the world and in Ukraine.

**Topic 38. Methodology of study and assessment of indicators of morbidity with temporary loss of working capacity.** The sheet of incapacity for work as a source of information for the study of morbidity with temporary loss of working capacity. Indicators: number of cases and days of incapacity for work per 100 employees, average duration of the case. In-depth study of the morbidity of workers depending on seniority, profession, working conditions.

**Topic 39. Methodological foundations of disease burden research. Significance of the results for the public health system.** Determination of the list of diseases, organization of constant monitoring. A set of indicators (DALE, HALE) characterizing the global burden of diseases: calculation methodology and assessment. Significance of disease burden research results for the public health system. Improving the health of the least socially protected population. Measures to reduce morbidity and mortality from the most common diseases in Ukraine and Europe.

**Topic 40. Medical and social aspects of disability. Calculation methodology and analysis of disability indicators .** Disability as an indicator of population health.

Violation of body functions leading to disability. Disability groups. Causes of disability. Classes of diseases causing the main causes of disability of the population. Indicators of disability: general disability (contingents of the disabled), primary disability (disability). The structure of causes of general and primary disability. Trauma as a cause of disability in children and adults. Disability among children and adults. Regional features and dynamics of disability indicators.

**Topic 41. Comprehensive assessment of population health.** Population health indicators. The main sources of information in the study of population health. Health criteria and groups. Comprehensive assessment of individual health. Assessment of quality of life. Comprehensive assessment of population health. Integral indicators of the comprehensive assessment of the population's health: population vitality coefficient; human development index. Indicators of the WHO population health assessment system (Summary Measures of Population Health): disability-adjusted life expectancy indicator - DALE (disability-adjusted life expectancy); health-adjusted life expectancy indicator - HALE (health-adjusted life expectancy).

**Topic 42. Analysis of indicators of physical development.** Characteristics of physical development as an indicator of population health. Definition of the concept of "physical development", its genetic and social conditioning. Biological development and morphofunctional development. Methods of assessment of physical development. Regional features and dynamics of indicators of physical development.

**Topic 43. Providing strategic leadership in the interests of health and well-being.** Strategic management: definition, key provisions. Types of strategic leadership in the interests of health. Vectors of development. Nationwide approach. The principle of participation of the whole society. A set of policy implementation tools. Political participation and leadership. Strategic planning of public health services, policy planning and monitoring of its implementation.

**Topic 44. Methodology for analyzing the causes of social inequality in relation to health and its protection.** Obstacles on the way to ensuring the necessary conditions for maintaining individual health. Social inequality as a cause of unsatisfactory access to medical care and social support. Analysis of the causes of social inequality in relation to health and its protection. Ways to improve the health of all strata of the population.

#### *Content section 5. Provision of public health protection*

**Topic 45. Ecological public health. Provision of public health protection, including environmental, labor, food safety, etc.** Ecological public health. Components of people's living environment: natural environment (environment), social environment (society) and man-made environment (domestic and industrial). The main sources of threats to the health of an individual or the community. Protection of people's living environment. Creating a "comfort zone" for a fulfilling life. The importance of intersectoral cooperation and international cooperation for the protection of people's living environment.

**Topic 46. Emergency situations in the field of public health. Bioterrorism.** Global threats to international health in the XXI century. Emergency situations in the field of public health: consequences of climate change, epidemics, mass exposure to chemical substances, radiation disasters. International security in the field of public



health. The role of WHO in the organization of notification and rapid response in emergency situations. The concept of international health, current problems of international health on the example of the European region. Bioterrorism is a global threat to international health. Biological weapons. A strategy of the public health system to reduce the risks of using biological weapons and their negative consequences.

**Topic 47. Stresses and conflicts. Mechanisms of protection of people from the actions of stress.** Stresses and conflicts as a cause of non-infectious diseases. Psychohygiene as the basis of prevention.

**Topic 48. Moral, ethical and legal aspects of health care interventions.** Development of reproductive medicine. Artificial insemination, surrogate motherhood, gamete donation: moral and ethical aspects. The role of reproductive medicine in solving the problem of low fertility. Moral, ethical and legal aspects of transplantation.

**Topic 49. Prevention and intersectoral cooperation in the public health system.** Prevention in the public health system: population, group, individual. Primary, secondary and tertiary prevention. Health promotion as a preventive activity of the health care system. International programs to ensure preventive activities of the health care system. Targeted preventive programs to combat the most socially significant diseases: coronary heart disease, hypertension, diabetes, tuberculosis, malignant neoplasms. The role of intersectoral cooperation in increasing the effectiveness and efficiency of preventive measures.

**Topic 50. Screening programs for early detection of diseases and risk factors.** Screening as a preventive technology. Screening programs for early detection of diseases and risk factors, their use.

**Topic 51. Informational and explanatory activities (advocacy) as a component of medical prevention.** Informing society, decision-makers, politicians about existing and potential threats to health, health problems, needs for preventive measures. The art and technique of informing, influencing and motivating people, institutions, and audiences regarding important issues of health determinants. Tasks and content of the work of public health centers, their structural subdivisions, interaction with other health care institutions. Development of preventive strategies to protect and strengthen health, reducing the negative impact of determinants on the health of the population. Preventive programs and disease prevention strategies.

**Topic 52. Health promotion. Types, forms and methods.** Methods and means of medical and hygienic education and education of the population, their features in various health care institutions'. Definition of the concepts of "health promotion", "healthy lifestyle", "prevention". Types of prevention. The importance of forming a healthy lifestyle for preserving and strengthening the health of the population. Leading lifestyle factors affecting the health 'of the population. Directions for the formation of a healthy lifestyle. Development of questionnaires for the study of factors influencing the state of health of the population. Drawing up a plan of lectures.

**Theme 53. Communication and social mobilization in the interests of health. Press releases and communication with mass media.** The importance of communication in matters of preserving and strengthening health. Forms of communications. Communication channels. The importance of relations with the public and mass media. Problems and possible errors. A press release in public health is an

important form of conveying medical information to the general public: rules of drafting and use.

**Topic 54. Informatization of public health. Medical information systems in the world and in Ukraine.** Information technologies in the global health care system. Medical information systems: saving information, quick access to information, mutual exchange of information, conducting statistical analysis of aggregated data, reducing staff time and reducing the number of errors. Terminological standards and rubricators. Complex automation of medical facilities. Electronic document management. Electronic card of the patient.

**Topic 55. Visualization and effective presentation of health data. Dissemination and use of results.** Effective presentation of health data. Traditional forms of data presentation in the form of charts and tables. Data visualization using modern technologies: infographics, animation, interaction. Forms of presentation: posters, postcards, booklets, presentations, films.

### **SECTION 3. HEALTH CARE ORGANIZATION and health care reform**

**Topic 56. Healthcare systems.** Definition of the concept of "health care system". Goals, values, functions, principles, conditions of successful functioning of healthcare systems. Types of healthcare systems, their characteristics, advantages and disadvantages. Historical stages of development of healthcare systems. Financing and staffing of health care systems.

**Topic 57. Health care reform in Ukraine.** Health care reform: definition of the term, driving forces. Directions and conditions for successful reform of the medical field. Model of the healthcare system of Ukraine: main characteristics and problems. Strategic documents defining ways of reforming the national health care system, stages, measures. Reforming the provision of services, financing, management, training of personnel in the national health care system.

**Topic 58. Organization of providing primary medical care to the population.** The essence of the concept of "primary medical care" (PMD). Principles of organizing PMD on the basis of family medicine. The role of the family doctor/general practitioner in meeting the medical needs of the urban and rural population. Models of work of a family doctor, their essence, problems of choosing specific models. Organizational models of the transition from the district-territorial system of medical provision of the population to family medicine, possibilities and expediency of different models. Reforming primary medical care in Ukraine.

**Topic 59. Organization of out-of-hospital (specialized and highly specialized) medical care for the population.** Classification of types of medical care by content and degree of complexity. The content of secondary (specialized) and tertiary (highly specialized) medical care. Institutions that provide outpatient polyclinic secondary and tertiary medical care. Specialist doctor, functions, qualifications. Medical categories. Phased provision of out-of-hospital medical care. Peculiarities of the organization of providing ambulatory specialized and highly specialized medical care to the rural population. Reforming outpatient medical care.

**Topic 60. Organization of inpatient medical care for the population .** The

content of secondary (specialized) and tertiary (highly specialized, high-tech, highly qualified) inpatient medical care. Institutions providing inpatient care. Reforming the provision of hospital medical care. Hospital district: principle of creation and characteristics of institutions. The structure and functions of hospitals. Peculiarities of providing inpatient care to the rural population. "Youth Friendly Clinic" and "Child Friendly Hospital" are hospitals of a new type with a special status. Clinics of research institutes, their role in providing tertiary care. New organizational forms of medical support for certain groups of the population - HIV-infected, tuberculosis patients, the elderly, senility, etc.

**Topic 61. Medical and social security of the elderly population.** History of gerontology and geriatrics. Age classification of the population. Medical and social significance of population aging. The impact of population aging on the demographic burden, morbidity and the need for medical care. Peculiarities of the health status of elderly people, methods of determining and evaluating indicators. The system of geriatric care organization in Ukraine (outpatient polyclinic, inpatient, inpatient replacement facilities). The need for geriatric care, its development and prospects. Geriatrician: functions and tasks. Geriatric education. Interaction of geriatric care facilities with structures of family medicine.

**Topic 62. Palliative and hospice care.** Palliative care - the need and security of the population. Basic principles of palliative care. Forms of providing palliative care. Hospices: characteristics of structure and activity.

**Topic 63. Organization and content of the work of institutions of the maternity and childhood protection system.** System of protection of motherhood and childhood. Reproductive health, dynamics of its main indicators. Characteristics of the health of the children's population. The importance of socio-economic, socio-psychological, medical and social measures aimed at improving the health of women and children. Curative and preventive facilities providing obstetric and gynecological care, peculiarities of their formation in urban and rural areas; their organization and content. Perinatal center. Women's consultation. Maternity hospital. Stages of medical care for children. Comprehensive assessment of children's health. Institutions providing medical assistance to children, their structure and functions. The main sections of the work of a pediatrician, family doctor. Office of a healthy child. Individual preparation of children for admission to school and preschool. Infectious disease of children and organization of preventive vaccinations. The state of children's immunoprophylaxis in Ukraine. Organization of specialized medical care for children. Organization of medical care in preschool institutions, schools. Children's homes, the state of health of their contingent.

**Topic 64. Analysis of the activity of the emergency (ambulance) medical service.** Emergency medical care: system, principles, tasks. Reforming the emergency medical service. Phasing and routing of emergency medical care. Performance indicators of the service. The importance of the emergency medical service (EMS), its facilities. Centers for emergency medical care and disaster medicine. Emergency medical care hospital. Structure, staff, tasks and main functions. Tasks of the station (department) of emergency medical aid (EMS) and its functions. Points of emergency medical care. EMD organization in rural areas. Interaction of the EMD service with various medical

institutions. Accounting documents of ShMD stations, determination and analysis of their activity indicators.

**Topic 65. Protection of mental health.** Mental health, definition of the concept. Mental health awareness in society and overcoming stigma. The main causes of mental health disorders. Indicators of morbidity, disability and mortality due to mental disorders. Organization of mental health care at the level of primary medical care, preventive and rehabilitation measures. Administration, interagency coordination and interdisciplinary cooperation in mental health care.

*Content section 7. Evaluation of the quality of medical care. Health care management*

**Topic 66. Methodology of conducting expert assessments of the quality of medical care for the population.** Basic concepts and terms of quality of medical care. Components of quality: structural quality; quality of technologies; quality of results. Methodology of quality assessment. Requirements for methods: suitability for use in relation to various stages and types of medical care, objectivity, possibility of quantitative assessment, correct reflection of the essence of medical activity. Quality standards of medical care regarding clinical and statistical groups, nosological forms. Standards of medical technologies. Application of clinical protocols. Medical and economic standards. Intermediate and long-term indicators of the quality of medical care. Importance of licensing and accreditation of medical institutions to ensure proper quality of medical care. Types of control over medical activity. Organization of an expert assessment of the activities of medical institutions, their divisions and medical workers. Methods of determining the level of quality of treatment, models of final results, integral coefficient of efficiency.

**Topic 67. Analysis of factors influencing the activity of health care institutions.** Factors affecting the effectiveness of health care institutions: Controlled and uncontrollable factors. Interaction of various healthcare institutions. Phasedness and continuity in the provision of medical assistance to the population. The value of medical and statistical information in determining factors influencing the activity of medical institutions. The use of statistical methods (probability estimation, correlation analysis, standardization method) in the analysis of the activity of health care institutions and determination of the influence of factors. Basic approaches to the development of measures to improve the provision of medical care.

**Topic 68. Organization of medical examination of disability.** Tasks of attending physicians during examination of temporary disability. Medical Advisory Commission (MAC): functions, composition, organization of work. The content, purpose and procedure for filling out accounting documents used during the examination of temporary incapacity for work. The value of the sick leave as an accounting, legal and financial document. Determination of the tactics of various officials of medical and preventive institutions in relation to specific types and cases of temporary incapacity. Issuance of leaves of incapacity for work in certain types and cases of temporary incapacity for work. Organization of examination of permanent disability. Medical and social expert commissions (MSEK), their types (by administrative and territorial characteristics, by profiles). Functions of MSEK. The content, purpose and procedure for filling out the main documents of permanent

disability, which are used in the examination. Determination and evaluation of the tactics of the MSEK in relation to establishing the cause and groups of disability in certain types of disability.

**Topic 69. Health care management. Management decision-making methodology . Personnel management .** Management as a science: laws, principles, methods. Schools of management. Modern development trends. System, situational management. Factors affecting the effectiveness of health care management. Peculiarities of the management process in the health care system at the branch, local and organizational levels in modern conditions. The role of the manager in ensuring the effectiveness of health care institutions. Management decision: definition, stages of implementation, advantages and disadvantages of various methods of its adoption. Determination of the type of management decision by content. Determination of management decision-making style. Peculiarities of the implementation of managerial decisions taking into account the socio-psychological layers of the team.

**Topic 70. Legal principles of health care. Medical Insurance.** The right to health care as a component of social rights. System of legal provision of health care in Ukraine. Branches of law with which relations arise in the implementation of the right to health care. Normative and legal legislation of Ukraine on health care issues. Reflection of health care issues in the codes of Ukraine (civil, economic, etc.).

The purpose and tasks of health insurance and insurance medicine. Principles, organizational and legal conditions and elements of insurance medicine. Types of health insurance: mandatory and voluntary. Insurance medicine in Ukraine: history and modernity. Subjects of insurance: the insured, the insurer, the provider of medical services. The object of insurance is an insurance risk for the insured's health. The risk for the insurer regarding probable payments for the provision of medical services to the insured . Health insurance program. Insurance policy. Insurance rates.

**Topic 71. Electronic health.** "Electronic health" system. Provision of information, resources and health care services using electronic means. Electronic registers of health care institutions, doctors. Electronic declarations. Electronic recipes. Development of telemedicine.

#### **CHAPTER 4. ECONOMICS OF HEALTH CARE**

*Content section 8. Health care institution as a business entity. Market relations in the field of health care*

**Topic 72. Health care institution as a business entity. Basics of entrepreneurial activity.** Health is the most important human need, individual and social value. Economics of health care: subject, purpose, task. Health care institution as a business entity. Enterprise: features, classification, legal basis of operation. The essence of entrepreneurship. Its importance in terms of health care reform. Business associations and voluntary associations. Organizational and legal forms of entrepreneurship. Terms of business activity. Entrepreneurial idea and necessary knowledge for its formation.

**Topic 73. Peculiarities of the formation of market relations in the health care system and marketing activities of medical institutions.** The economic essence of market relations in the field of health care. Peculiarities of the functioning of health care institutions in the conditions of market relations. The market mechanism and its impact

on the formation of patient needs. Market of medical services. Characteristic features of "medical service". Competition and its significance for the market of medical services. Marketing activity in the field of health care, origins, consequences and prospects.

**Topic 74. Methods of rational use of the resource potential of a medical enterprise .** Classification of resources in the field of health care. Classification of medical personnel. Peculiarities of remuneration of medical service providers. Evaluation of the effectiveness of the use of the main means of medical institutions. Depreciation calculation methods. The essence and types of the cost of fixed assets.

**Topic 75. Systems of financing health care institutions. Economic evaluation of the effectiveness of investment projects.** The essence and importance of financial resources in health care. Comparison of models of the organization of financial support of the health care system. Evaluation of sources of health care financing. Medical insurance, voluntary and mandatory medical insurance, methods of paying for medical care. Evaluation of the efficiency of investment of financial funds.

**Topic 76. Pricing methods and price regulation in the health care system.** The economic essence of the pricing process and its features in the field of health care. Stages of pricing and their essential characteristics. Classification of costs. Formation of the cost of medical services. Formation of prices for medical services. Pricing policy.

***Content section 9. Economic analysis and methods of economic evaluation in the field of health care***

**Topic 77. Economic analysis and methods of economic evaluation in the field of health care.** The essence and significance of economic analysis for the health care system, medical enterprise. Economic essence of pharmacoeconomic analysis. Methods of economic assessment as a tool for rational use of industry resources: "cost minimization", "cost-effectiveness", "cost-benefit", "cost-utility". Determination and analysis of the economic efficiency of health care institutions. Study of economic losses in case of temporary loss of working capacity caused by population morbidity and injuries. Economic effect and economic efficiency. Direct costs and indirect losses associated with morbidity and disability of the population.

**Topic 78. Modern methods of economic analysis in the health care system.** Evaluation of the effectiveness of the use of medicinal products according to the methodology of frequency analysis. Evaluation of the effectiveness of the use of medicinal products according to the VEN-analysis methodology. Evaluation of the effectiveness of the use of medicinal products according to the ABC analysis methodology .

**Topic 79. Methodology of conducting a financial analysis of the economic activity of a medical institution.** The essence of financial analysis in health care. Analysis of the financial condition of the medical enterprise. Determination of the main indicators of the financial performance of medical and industrial enterprises for the purpose of making management decisions .

**The structure of the academic discipline**

The structure of the academic discipline	Number of hours, of them				Year of study
	hours/ ECTS credits	classrooms		SRS	
		lecture s	practical classes		

<i>Chapter 1. Biostatistics</i>	90 / 3	8	38	44	3rd
<i>Chapter 2. Public health</i>	90 / 3	8	38	44	4th
<i>Chapter 3. Health care organization</i>	90/3	-	48	42	the 6th
<i>Chapter 4. Health care economics</i>	60 / 2	-	30	30	the 6th
	<b>330/11</b>	<b>16</b>	<b>154</b>	<b>160</b>	

No	Names of topics	Number of hours			
		That's all	Including		
			Lectures	Practical training	Individual work
<b>Chapter 1. BIOSTATISTICS</b>					
<i>Content section 1. Biostatistics . Methodical foundations organizations statistical studies</i>					
<b>1</b>	Social medicine and public health as a science. Biostatistics as a methodological basis analysis and assessment of the health of the population and the health care system.	3	2	-	1
<b>2</b>	Methodological foundations of the organization of statistical research. Data types. Methods of collecting statistical material.	3	2	-	1
<b>3</b>	Organization and planning of statistical research.	4	-	2	2
<b>4</b>	Compilation of statistical research programs.	4	-	2	2
<b>5</b>	Relative values.	4	-	2	2
<b>6</b>	Graphic methods of analysis.	4	-	2	2
<b>7</b>	Average values and indicators of variation.	4	-	2	2
<b>8</b>	Method of standardization .	4	-	2	2
<b>9</b>	Assessment of the probability of research results. Characteristics and analysis of statistical errors.	4	2		2
<b>10</b>	Parametric methods of probability estimation.	4	-	2	2
<b>11</b>	Non-parametric methods of probability estimation.	4	-	2	2
<b>12</b>	Correlation-regression analysis.	4	-	2	2
<b>thirteen</b>	Dynamics series and their analysis.	4	-	2	2
<i>Content section 2. Epidemiological research in security health</i>					
<b>14</b>	Epidemiological studies in health care, their classification. Empirical and experimental studies.	4	2		2
<b>15</b>	Design of epidemiological studies: case-control, cohort, randomized clinical trials.	4	-	2	2
<b>17</b>	Risk factors. Methodology for calculating risk indicators and their assessment	4	-	2	2
<b>18</b>	Screening. Methodology for assessing the sensitivity and specificity of screening tests.	4	-	2	2
<b>19</b>	Overview of modern methods of statistical analysis (dispersion, multivariate, cluster ).	4	-	2	2
<b>20</b>	Information provision of epidemiological and clinical studies. Systematic reviews and meta-analysis.	4	-	2	2
<b>21</b>	Medical statistics, the role in the analysis of population health and the activity of the health care system. Electronic document management.	4	-	2	2
<b>22</b>	Databases on population health. Organization and conduct of statistical research in public health.	4	-	2	2

23	Use of biostatistics knowledge in the daily practice of a doctor. Statistical research software and the procedure for presenting scientific papers.	4	-	2	2
24	Basics of preparing a scientific publication.	4	-	2	2
	<b>Total hours for Chapter 1</b>	<b>90</b>	<b>8</b>	<b>38</b>	<b>44</b>
<b>ECTS credits per section – 3.0</b>					
<b>SECTION 2 . PUBLIC HEALTH</b>					
<i><b>Content section 3 . Public health, functions and services Health of the population</b></i>					
25	Public health, functions and services.	3	2	-	1
26	Surveillance and assessment of the state of health and well-being of the population.	4	-	2	2
27	Population health: the main determinants.	3	2	-	1
28	Medical and social problems of demographic processes.	1	-	-	1
29	Methods of studying and evaluating the main demographic indicators of the natural movement of the population. Analysis of the demographic situation .	4	-	2	2
30	Analysis of the composition of the population by age, sex, place of residence.	2	-	1	1
31	Aging population. Analysis of social security indicators and demographic burden.	2	-	1	1
32	Life as a value. Attitude towards death and dying as a moral problem.	2	-	-	2
33	Methods of studying and evaluating infant mortality rates.	4	-	2	2
34	Methods of study and assessment of factors affecting the health of the population.	3	-	2	1
<i><b>Content section 4. Morbidity of the population</b></i>					
35	Morbidity of the population as a medical and social problem.	3	2	-	1
36	Methods of study and assessment of indicators of general morbidity.	4	-	2	2
37	Methodology of study and assessment of incidence rates for the most important socially significant diseases.	3	-	2	1
38	Methodology of study and assessment of indicators of morbidity with temporary loss of working capacity.	3	-	2	1
39	Methodological foundations of research on the burden of diseases. Significance of the results for the public health system.	2	-	-	2
40	Medical and social aspects of disability. Calculation methodology and analysis of disability indicators .	3	-	2	1
41	Comprehensive assessment of population health.	4	-	2	2
42	Analysis of indicators of physical development.	4	-	2	2
43	Providing strategic leadership in the interests of health and well-being.	2	-	-	2
44	Methodology for analyzing the causes of social inequality in relation to health and its protection.	3	-	2	1
<i><b>Content section 5. Provision of public health protection</b></i>					
45	Ecological public health. Provision of public health protection, including environmental, labor, food safety, etc.	3	2	-	1
46	Emergency situations in the field of public health. Bioterrorism.	2		-	2
47	Stresses and conflicts. Mechanisms of protection of people from the actions of stress.	3	-	2	1
48	Moral-ethical and legal aspects of health care interventions.	1	-	-	1



49	Prevention and intersectoral cooperation in the public health system.	1	-	-	1
50	Screening programs for early detection of diseases and risk factors.	3	-	2	1
51	Informational and explanatory activities (advocacy) as a component of medical prevention.	3	-	2	1
52	Health promotion. Types, forms and methods.	4	-	2	2
53	Communication and social mobilization in the interests of health. Press releases and communication with mass media.	4	-	2	2
54	Informatization of public health. Medical information systems in the world and in Ukraine.	4	-	2	2
55	Visualization and effective presentation of health data. Dissemination and use of results.	3	-	2	1
	<b>Total hours for Chapter 2</b>	<b>90</b>	<b>8</b>	<b>38</b>	<b>44</b>
<b>ECTS credits per section – 3.0</b>					
<b>SECTION 3 . ORGANIZATION OF HEALTH PROTECTION</b>					
<i>and health care reform</i>					
56	Healthcare systems.	4	-	2	2
57	Health care reform in Ukraine.	5	-	2	3
58	Organization of providing primary medical care to the population.	4	-	2	2
59	Organization of secondary (specialized) medical and preventive care for the population.	5	-	2	3
60	Organization of tertiary (highly specialized) medical and preventive care for the population .	6	-	4	2
61	Medical and social security of the elderly population.	5	-	2	3
62	Palliative and hospice care.	5	-	2	3
63	Organization and content of the work of institutions of the maternity and childhood care system.	6	-	4	2
64	Analysis of the activity of the emergency (ambulance) medical service .	7	-	4	3
65	Protection of mental health	5	-	2	3
<i>Content section 7. Evaluation of the quality of medical care. Health care management</i>					
66	The methodology of conducting expert assessments of the quality of medical care for the population.	7	-	4	3
67	Analysis of factors influencing the activity of health care institutions.	7	-	4	3
68	Organization of medical examination of disability.	6	-	4	2
69	Health care management. Management decision-making methodology. Personnel management .	7	-	4	3
70	Legal principles of health care. Medical Insurance.	5	-	2	3
71	Electronic health.	6	-	4	2
	<b>Total hours for Chapter 3</b>	<b>90</b>		<b>48</b>	<b>42</b>
<b>ECTS credits per section – 3</b>					
<b>SECTION 4 . ECONOMICS OF HEALTH CARE</b>					
<i>Content section 8. Health care institution as a business entity. Market relations in the field of health care</i>					
72	Health care institution as a business entity. Basics of entrepreneurial activity.	6	-	2	4
73	Peculiarities of the formation of market relations in the health care system and marketing activities of medical institutions.	8	-	4	4
74	Methods of rational use of the resource potential of a medical	8	-	4	4

	enterprise.				
75	Systems of financing health care institutions. Economic evaluation of the effectiveness of investment projects.	8	-	4	4
76	Methods of pricing and price regulation in the health care system.	8	-	4	4
<b>Content section 9. Economic analysis and methods of economic evaluation in the field of health care</b>					
77	Economic analysis and methods of economic evaluation in the field of health care.	8	-	4	4
78	Modern methods of economic analysis in the health care system	8	-	4	4
79	Methodology of financial analysis of economic activity of a medical institution.	6	-	4	2
<b>Total hours for Chapter 4</b>		<b>60</b>	<b>-</b>	<b>30</b>	<b>30</b>
<b>ECTS credits for Section - 2</b>					
<b>Total hours per discipline</b>		<b>330</b>	<b>16</b>	<b>154</b>	<b>160</b>
<b>ECTS credits for the discipline - 11</b>					

### 3. Topics of lectures

No	Topic name	Number hours
<b>SECTION 1 . BIOSTATISTICS</b>		
1	Social medicine and public health as a science. Biostatistics as a methodological basis for analysis and evaluation of the health of the population and the health care system.	2
2	Methodological foundations of the organization of statistical research. Data types. Methods of collecting statistical material.	2
3	Assessment of the probability of research results. Characteristics and analysis of statistical errors.	2
4	Epidemiological studies in health care, their classification. Empirical and experimental studies.	2
<b>Total hours for chapter 1</b>		<b>8</b>
<b>CHAPTER 2. PUBLIC HEALTH</b>		
5	Public health, functions and services.	2
6	Population health: the main determinants.	2
7	Morbidity of the population as a medical and social problem.	2
8	Ecological public health. Provision of public health protection.	2
<b>Total hours for Chapter 2</b>		<b>8</b>
<b>Total hours per discipline*</b>		<b>16</b>

\*Note. Lectures in the 6th year of study (SECTION 3 and SECTION 4) are not provided for in the curriculum.

### 4. Topics of seminar classes (Seminar classes are not provided for in the curriculum)

### 5. Topics of practical classes

No	Topic name	Number Hour
<b>SECTION 1 . BIOSTATISTICS</b>		
<b>Content section 1. Biostatistics . Methodical foundations organizations statistical studies</b>		
1	Organization and planning of statistical research.	2
2	Compilation of statistical research programs.	2
3	Relative values.	2
4	Graphic methods of analysis.	2

5	Average values and indicators of variation.	2
6	Method of standardization .	2
7	Parametric methods of probability estimation.	2
8	Non-parametric methods of probability estimation.	2
9	Correlation-regression analysis.	2
10	Dynamics series and their analysis.	2
<b><i>Content section 2. Epidemiological research in security health</i></b>		
11	Design of epidemiological studies: case-control, cohort, randomized clinical trials.	2
12	Risk factors. Methodology for calculating risk indicators and their assessment.	2
thirteen	Screening. Methodology for assessing the sensitivity and specificity of screening tests.	2
14	Modern methods of statistical analysis (dispersion, multivariate, cluster ).	2
15	Information provision of epidemiological and clinical studies.	2
16	Electronic document management.	2
17	Databases on population health.	2
18	Statistical research software and the procedure for presenting scientific works.	2
19	Basics of preparing a scientific publication.	2
<b>Total hours for chapter 1</b>		<b>38</b>
<b>SECTION 2. PUBLIC HEALTH</b>		
<b><i>Content section 3 . Public health, functions and services Health of the population</i></b>		
2 0	Surveillance and assessment of the state of health and well-being of the population.	2
2 1	Methods of studying and evaluating the main demographic indicators of the natural movement of the population. Analysis of the demographic situation .	2
2 2	Analysis of the composition of the population by age. Analysis of social security indicators and demographic burden.	2
2 3	Methods of studying and evaluating infant mortality rates.	2
2 4	Methods of study and assessment of factors affecting the health of the population.	2
<b><i>Content section 4. Morbidity of the population</i></b>		
2 5	Methods of study and assessment of indicators of general morbidity.	2
2 6	Methodology of study and assessment of incidence rates for the most important socially significant diseases.	2
2 7	Methodology of study and assessment of indicators of morbidity with temporary loss of working capacity.	2
2 8	Calculation methodology and analysis of disability indicators .	2
29	Comprehensive assessment of population health.	2
3 0	Analysis of indicators of physical development.	2
3 1	Analysis of the causes of social inequality in relation to health and its protection.	2
<b><i>Content section 5. Provision of public health protection</i></b>		
32	Mechanisms of protection of people from the actions of stress.	2
33	Screening programs for early detection of diseases and risk factors.	2
3 4	Advocacy is a component of medical prevention.	2
3 5	Health promotion. Types, forms and methods.	2
3 6	Communication and social mobilization in the interests of health. Press releases and communication with mass media.	2
3 7	Medical information systems in the world and in Ukraine.	2
38	Visualization and effective presentation of health data.	2
<b>Total hours for Chapter 2</b>		<b>38</b>

<b>SECTION 3. HEALTH CARE ORGANIZATION and health care reform</b>		
<b>3 9</b>	Healthcare systems.	2
<b>40</b>	Health care reform in Ukraine.	2
<b>41</b>	Organization of providing primary medical care to the population.	2
<b>4 2</b>	Organization of secondary (specialized) medical and preventive care for the population.	2
<b>4 3</b>	Organization of tertiary (highly specialized) medical and preventive care for the population .	4
<b>4 4</b>	Medical and social security of the elderly population.	2
<b>4 5</b>	Palliative and hospice care.	2
<b>4 6</b>	Organization and content of the work of institutions of the maternity and childhood care system.	4
<b>4 7</b>	Analysis of the activity of the emergency (ambulance) medical service .	4
<b>4 8</b>	Protection of mental health	2
<b><i>Content section 7. Evaluation of the quality of medical care. Health care management</i></b>		
<b>4 9</b>	The methodology of conducting expert assessments of the quality of medical care for the population.	4
<b>50</b>	Analysis of factors influencing the activity of health care institutions.	4
<b>51</b>	Organization of medical examination of disability.	4
<b>5 2</b>	Health care management. Management decision-making methodology. Personnel management .	4
<b>5 3</b>	Legal principles of health care. Medical Insurance.	2
<b>5 4</b>	Electronic health.	4
<b>Total hours for chapter 3</b>		<b>48</b>
<b>SECTION 4 . ECONOMICS OF HEALTH CARE</b>		
<b><i>Content section 8. Health care institution as a business entity. Market relations in the field of health care</i></b>		
<b>5 5</b>	Health care institution as a business entity. Basics of entrepreneurial activity.	2
<b>5 6</b>	Peculiarities of the formation of market relations in the health care system and marketing activities of medical institutions.	4
<b>5 7</b>	Methods of rational use of the resource potential of a medical enterprise.	4
<b>5 8</b>	Systems of financing health care institutions. Economic evaluation of the effectiveness of investment projects.	4
<b>5 9</b>	Methods of pricing and price regulation in the health care system.	4
<b><i>Content section 9. Economic analysis and methods of economic evaluation in the field of health care</i></b>		
<b>60</b>	Economic analysis and methods of economic evaluation in the field of health care.	4
<b>61</b>	Modern methods of economic analysis in the health care system	4
<b>6 2</b>	Methodology of financial analysis of economic activity of a medical institution.	4
<b>Total hours for chapter 4</b>		<b>30</b>
<b>Total hours per discipline</b>		<b>152</b>

**7. Topics of laboratory classes** (Laboratory classes are not provided for in the curriculum)

## 8. Individual work

No	Topic name	Number hours
<b>CHAPTER 1. BIostatISTICS*</b>		
	Preparation for practical classes – theoretical preparation and development of practical skills.	24
1	Standardization of medical care: clinical protocols, standards and recommendations.	2
2	Marketing and sociological surveys, types of questions in questionnaires, problems of organizing surveys in health care	2
3	Concepts and types of structure of medical and biological data, structural changes, features of their analysis	2
4	Peculiarities of using non-parametric criteria: Mann-Whitney, Kruskal-Wallis	1
5	Peculiarities of using the Student method on small samples.	2
6	Chi-square criterion, its evaluation and practical application	1
7	Using regression analysis for forecasting	2
8	Forecasting based on extrapolation of dynamics series	1
9	Cohort and case-control studies.	1
10	Concepts of randomization and stratification.	2
11	Determination of the odds ratio indicator in a cohort study: calculation method and evaluation	1
12	The Cochrane Collaboration: History and Activities	1
thirteen	Rules for creating references to sources of information, list of literature	2
<b>Total hours for chapter 1</b>		<b>44</b>
<b>SECTION 2. PUBLIC HEALTH *</b>		
	Preparation for practical classes – theoretical preparation and development of practical skills.	24
14	Analysis of the composition of the population by age, sex, place of residence.	1
15	Aging population. Analysis of social security indicators and demographic burden.	1
16	Life as a value. Attitude towards death and dying as a moral problem.	2
17	Methodology of study and assessment of indicators of morbidity with temporary loss of working capacity.	1
18	Methodological foundations of research on the burden of diseases. Significance of the results for the public health system.	2
19	Analysis of indicators of physical development.	1
20	Providing strategic leadership in the interests of health and well-being.	2
21	Ecological public health. Provision of public health protection, including environmental, labor, food safety, etc.	1
22	Emergency situations in the field of public health. Bioterrorism.	2
23	Stresses and conflicts. Mechanisms of protection of people from the actions of stress.	1
24	Moral and ethical and legal aspects of health care interventions.	1
25	Health promotion	2
26	Informatization of public health. Medical information systems in the world and in Ukraine.	2
27	Visualization and effective presentation of health data. Dissemination and use of results.	1
<b>Total hours for Chapter 2</b>		<b>44</b>
<b>SECTION 3. HEALTH CARE ORGANIZATION *</b>		
	Preparation for practical classes – theoretical preparation and development of	22

	practical skills.	
28	Healthcare systems.	1
29	Health care reform in Ukraine.	1
30	Organization of providing primary medical care to the population.	1
31	Organization of secondary (specialized) medical and preventive care for the population.	2
32	Medical and social security of the elderly population.	2
33	Palliative and hospice care.	1
34	Organization and content of the work of institutions of the maternity and childhood care system.	1
35	Analysis of the activity of the emergency (ambulance) medical service .	2
36	Protection of mental health	1
37	The methodology of conducting expert assessments of the quality of medical care for the population.	2
38	Analysis of factors influencing the activity of health care institutions.	1
39	Organization of medical examination of disability.	1
40	Health care management. Management decision-making methodology. Personnel management .	2
41	Legal principles of health care. Medical Insurance.	1
42	Electronic health.	1
<b>Total hours for chapter 3</b>		<b>42</b>
<b>CHAPTER 4. ECONOMICS OF HEALTH CARE*</b>		
43	Preparation for practical classes – theoretical preparation and development of practical skills.	16
44	Health care institution as a business entity. Basics of entrepreneurial activity.	2
45	Peculiarities of the formation of market relations in the health care system and marketing activities of medical institutions.	2
46	Methods of rational use of the resource potential of a medical enterprise.	2
47	Systems of financing health care institutions. Economic evaluation of the effectiveness of investment projects.	2
48	Methods of pricing and price regulation in the health care system.	2
49	Economic analysis and methods of economic evaluation in the field of health care.	2
50	Modern methods of economic analysis in the health care system	2
<b>Total hours for chapter 4</b>		<b>30</b>
<b>Total hours per discipline</b>		<b>160</b>

\***Note.** According to this program, students will independently master individual topics in sections not provided.

## 9. Individual tasks. ( not provided for in the curriculum)

## 10. Teaching methods

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity , the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, conversation;

2. Visual methods: illustration, demonstration
3. Practical methods: performing practical work and solving situational tasks to develop skills and abilities;
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: business game, case method, Research-based learning (RBL). Learning through research.
7. The types of training according to the curriculum are: lectures; practical training; independent work of students.

## 11. Control methods

**Current control** is carried out on the basis of control theoretical knowledge, practical skills and abilities.

**Forms of current control** are: *in the* dream survey (frontal, individual, combined), interview; practical verification of professional skills (conducted based on the results of practical work at the end of the class); test control ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook. The final (summary) control of the sections is carried out at the end of the section in the form of a written test, which includes test tasks from the "Step-1" bank, theoretical questions and control of practical skills, solving situational problems, etc.

Such methods of control as oral, written and test are used, which should contribute to increasing the motivation of students-future specialists for educational and cognitive activities. According to the specifics of professional training, preference is given to test and written control. In the case of final control, preference is given to written or test control.

## 12. Form of final control of study success .

The final control of the discipline is carried out on the basis of theoretical control knowledge, practical skills and abilities.

**Set -off** is a form of final control. It consists in evaluating the student's assimilation of educational material based on the results of his performance of certain types of work in practical classes. Semester assessment of subjects is carried out after the end of its study, before the beginning of the examination session.

**An exam** is a form of final control of a student's assimilation of theoretical and practical material from an educational discipline.

### 13. Scheme of accrual and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

**The first and second semesters of studying the discipline end with a credit.**

*The maximum number of points* that a student can score for the current educational activity while studying the discipline is 200 points, *the minimum number of points* - the minimum number of points - is 120 points.

*The calculation of the number of points* is carried out on the basis of the grades received by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean, rounded to two decimal places.

The student receives a credit in the last lesson of the discipline based on the results of the current assessment. Only those students who do not have academic debt and whose average score for the current academic activity in the academic discipline is at least 3.00 are admitted to the credit.

The average grade for the current activity is converted into points on a 200-point scale, according to the conversion table (Table 1).

**Table 1.**

**Recalculation of the average grade for the current activity into a multi-point scale (for disciplines ending with credit)**

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.47	179	3.94	158	3.42	137
4.97	199	4.44	178	3.92	157	3.39	136
4.94	198	4.42	177	3.89	156	3.37	135
4.92	197	4.39	176	3.87	155	3.34	134
4.89	196	4.37	175	3.84	154	3.32	133
4.87	195	4.34	174	3.82	153	3.29	132
4.84	194	4.32	173	3.79	152	3.27	131
4.82	193	4.29	172	3.77	151	3.24	130
4.79	192	4.27	171	3.74	150	3.22	129
4.77	191	4.24	170	3.72	149	3.19	128
4.74	190	4.22	169	3.69	148	3.17	127
4.72	189	4.19	168	3.67	147	3.14	126
4.69	188	4.17	167	3.64	146	3.12	125
4.67	187	4.14	166	3.62	145	3.09	124
4.64	186	4.12	165	3.59	144	3.07	123
4.62	185	4.09	164	3.57	143	3.04	122
4.59	184	4.07	163	3.54	142	3.02	121
4.57	183	4.04	162	3.52	141	3	120
4.54	182	4.02	161	3.49	140	< 3	70-119 (refolding)
4.52	181	4.00	160	3.47	139		
4.49	180	3.97	159	3.44	138		

The learning result is also evaluated on a two-point scale (passed/failed).

**Table 2**



### The scale of transferring points to the national system

According to the national system	On a 200-point scale
counted	from 120 to 200 points
not counted	less than 119 points

Students' independent work, which is provided for by the topic of the lesson along with classroom work, is evaluated during the current control of the topic in the corresponding lesson.

**The last semester of studying the discipline** ends with a final control in the form of an exam.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the exam.

*The maximum number of points* that a student can score for the current educational activity for admission to the exam is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

*The minimum number of points* that a student must score for the current educational activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 3.

**Table 3.**

#### Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking the exam is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points

are added to the final grade for the discipline at the end of its study. Points with disciplines for students, which successfully completed the program are converted into the national scale and ECTS system (tables 4, 5).

Table 4.

Discipline points	Evaluation on a 4-point scale
From 180 to 200 points	5
From 150 to 179 points	4
From 149 points to the minimum number of points that the student must score	3
Below the minimum number of points that the student must score	2

Table 5

### Scale assessment: national and ECTS

Total points for all types educational activity	Rating ECTS	Rating by national scale	
		for exam, difzalik	for offset
180-200	A	perfectly	Enrolled
160-179	B	okay	
150-159	C	satisfactorily	
130-149	D		
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility rearrangement
0-49	F	unsatisfactorily with mandatory repeated studying the discipline	not counted with mandatory repeated study disciplines

## 14. Methodological support

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

## 16. Recommended literature

### Basic (basic)

1. Biostatistics : a textbook / [ Gruzheva T.S., Lekhan V.M., Ognev V.A. and others ]; in general \_ ed. Gruzevoy T. S. - Vinnytsia : Nova Kniga, 2020. - 384 p.
2. Zdrowie publiczne / Marian Sygit . – Warszawa: Wolters Kluwer, 2017. – 689 p..
3. Public health and behavioral economics / V. O. Kurganska, V. A. Smiyanov , O. I. Smiyanova // Herald of social hygiene and health care organizations of Ukraine. - 2019. - No. 2 (80). - P. 33-39.

4. Rational and safe nutrition as the basis of public health : educational manual / A. G. Dyachenko, V. A. Kurganskaya, V. V. Kasyanchuk and others . – Amounts : Sumy state University , 2017. – 354 p
5. Golyachenko O.M. Social medicine and the organization of health care .-Kyiv: VSV "Medicine", 2011.- 208 p.
6. Public health: a national textbook / V.F. Moskalenko, O.P. Gulchii, T.S. Gruzeva and others, ed. V.F. Moskalenko; Ministry of Health of Ukraine; O.O. Bogomolets National Medical University - 3 ed. Vinnytsia: New Book, 2013. - 560 p.
7. Collection of test tasks for state examinations in hygiene, social medicine, organization and economics of health care / edited by V.F. Moskalenko, V.G. Bardova, O.P. Yavorskyi. - Vinnytsia: Nova kniga, 2012. - 200 s.
8. Economics of health care: Textbook / V.F. Moskalenko, O.P. Gulchii, V.V. Ruden and others; edited by V.F. Moskalenko. - Vinnytsia: Nova kniga, 2010. - 288 p.
9. Baeva O.V. Insurance medicine and medical insurance: teaching. manual/O.V. Baeva. - K.: VD "Personal", 2013.-432 p.
10. Baeva O.V., Cheban V.I. Economics and entrepreneurship in health care. Education manual. – Chernivtsi: BDMU Publishing House, 2013. – 360 p.
11. Solonenko N.D. Economics of health care: training. guide/K.: SE "Personnel Publishing House", 2014.-408 p.
12. Baeva O.V., Cheban V.I. Management and organization of the work of medical and preventive institutions. Education manual. Part 1 Chernivtsi: Publishing House of the BSMU - 2013. - 372 p.
13. Baeva O.V., Cheban V.I. Management and organization of the work of medical and preventive institutions. Education manual. Chernivtsi: BSMU Publishing House. Part 2 - 2013. - 308 p.

#### **14. Auxiliary:**

15. Baeva O.V. Management in the field of health care: Education. Manual.-K.: TsUL, 2008, 640 p.
16. Biostatistics: textbook/V.F. Moskalenko, O.P. Gulchii, M.V. Golubchikova and others. Edited by V.F. Moskalenko.-K.: Knyga plus, 2009.-184 p.
17. Methods of studying health of the population: Study guide for students of medical faculties / V.Y. Agarkov, L.V. Buteva, S.V. Hryshchenko. etc. - Donetsk: DonNMU, 2011.-106 p.
18. Experience of European countries in financing the health care sector. Lessons for Ukraine / In general ed. V.G. Chernenko and V.M. Redhead -K.: Akadempres, 2002. – 112 p.
19. Health care of Ukraine: state, problems, prospects/ L.A. Chepelevska, O.R. Sytenko, V.V. Poor and others; under the editorship of Lazoryryshyntsia. - K.: 2014. - 607 p.
20. Health care in Ukraine: organization and legislative support: monograph / A.I. Kozachenko, V.M. Pashkov, V.P. Lysak and others, according to ag. Edited by V.P. Lysak, V.M. Pashkov, I.A. Golovanova .- K.: MORION, 2014.-335 p.

21. Practical guide to medical statistics: Textbook for medical universities/ed. V.I. Agarkova.-Donetsk: Knowledge.-2011.-276 p.
22. Ruden V.V. Insurance medicine and medical insurance. -L., 1999. 303 p.
23. Saltman RB, Figueiras J. Reforms of the healthcare system in Europe. Analysis of modern strategies / Trans. with English -M.: GEOTAR Medicine, 2000. 423 p.
24. Semigina T.V. Analysis of health care policy: a study guide/ T.M.Semygina.-K.: NaUKMA, 2012.- 479 p.
25. The Globalization of Managed Care //Health Future Forum - (March 19 -21 Singapore) - Singapore, 1997. - 126 p.
26. Health economics. Textbook Under the scientific editorship of M.G. Kolosnitsyna, I.M. Sheyman, S.V. Shyshkina M., Izd. House of the State University of Higher Education, 2009, 479 p.
27. Barrachina J. Axis II comorbidity in borderline personality disorder is influenced by sex, age, and clinical severity./ Barrachina J, Pascual JC, Ferrer M, Soler J, Rufat MJ, Andi3n O, Tiana T, Mart3n-Blanco A, Casas M , P3rez V.// Compr Psychiatry. 2011.- 22.
28. Buitelaar JK, Functional improvement and correlations with symptomatic improvement in adults with attention deficit hyperactivity disorder receiving long-acting methylphenidate./ Buitelaar JK, Casas M, Philipsen A, Kooij JJ, Ramos-Quiroga JA, Dejonckheere J, van Oene JC, Sch3uble B .// Psychol Med. 2011 .- 1:1-10.
29. Erlandson E. Improving the efficiency of health care spending: selected evidence on hospital performance//OECD economics department working paper.-2007.- N.555.-9 p.
30. Feldstein P. Health Care Finance and Economics.6<sup>rd</sup> ed. Thomson Delmar Learning, 2004
31. Getzen TE: Health Economics Fundamentals and Flow of Funds. 2<sup>nd</sup> J. Wiley Sons, 2004
32. Henderson J. Health Economics and Policy. 3<sup>rd</sup> ed . Thomson - South Western, 2005
33. Implementing Health Financing Reform. Lessons from countries in transition / European Observatory on Health Systems and Policies; ed.: J. Kutzin, C. Cashin, M. Jakab. - Copenhagen: WHO, 2010. - 411 p. -
34. Kolb D., Horowitz J. Managing the translation to capitation //Healthcare Financial Management. Healthcare Financial Management. February. 1995. V. 49. No. 2. R. 64-692
35. Phelps C. Health Economics. 3<sup>rd</sup> Boston: Addison Wesley, 2002
36. Thomson S, Mossialos E. What are the consequences of private financing of health services in Western Europe in terms of equity, efficiency, cost reduction, and choice? What are the equity, efficiency, cost containment and choice implications of private healthcare funding in western Europe? Copenhagen, WHO Regional Office for Europe (Health Evidence Network report; <http://www.euro.who.int/Document/E83334R.pdf>, accessed 07 July 2004).
37. The Law of Ukraine "Basics of the Legislation of Ukraine on Health Care" dated November 19, 1992// Bulletin of the Verkhovna Rada of Ukraine. – 1993.- No.

- 43.
38. Law of Ukraine On the Procedure for Reforming the Health Care System in Vinnytsia, Dnipropetrovsk, Donetsk Oblasts and the City of Kyiv // Gazette of the Verkhovna Rada of Ukraine (VVR), - 2012.- N 12-13, Article 81
39. Resolution of the Cabinet of Ministers of Ukraine "On approval of the Procedure for conducting activities related to the circulation of narcotic drugs, psychotropic substances and precursors, and control over their circulation" dated June 3, 2009 No. 589.
40. Order of the Ministry of Health of Ukraine "On approval of the lists of health care institutions, medical, pharmacist positions and positions of junior specialists with pharmaceutical education in health care institutions" dated 11.12.2002 No. 385 (With changes and additions, introduced by the Order of the Ministry of Health of Ukraine dated March 17, 2003 No. 114)
41. Law of Ukraine "On the procedure for reforming the health care system in Vinnytsia, Dnipropetrovsk, Donetsk regions and the city of Kyiv" // VVR.-2011 .- № 3612-VI
42. Draft Law of Ukraine "On Health Care Institutions "
43. Order of the Ministry of Health of Ukraine "Procedure for the organization of medical care and referral of patients to health care institutions providing secondary (specialized) and tertiary (highly specialized) medical care" dated October 5, 2011 N 646
44. Order of the Ministry of Health of Ukraine "On Approval of Model Regulations on Health Care Institutions" dated December 30, 2011 No. 1008
45. Order of the Ministry of Health of Ukraine "On approval of the Model report card for equipping medical and preventive units of health care institutions that provide primary medical (medical and sanitary) care" dated February 23, 2012 No. 132
46. Order of the Ministry of Health of Ukraine "On approval of the Model Regulation on the center of primary medical (medical and sanitary) care and model regulations on its subdivisions" dated February 23, 2012 No. 131
47. Order of the Ministry of Health of Ukraine "On Approval of the Sample List of Laboratory Tests Performed When Providing Primary Medical Aid to the Population" dated February 23, 2012 No. 130
48. Order of the Ministry of Health of Ukraine "On the approval of the sample staffing standards of the center of primary medical (medical and sanitary) care" dated February 23, 2012 No. 129

#### **49.17. Information resources**

50. World Health Organization [www.who.int](http://www.who.int)
51. European database "Health for all" [www.euro.who.int/ru/home](http://www.euro.who.int/ru/home)
52. Cochrane Center for Evidence-Based Medicine [www.cebm.net](http://www.cebm.net)
53. Cochrane Library [www.cochrane.org](http://www.cochrane.org)
54. US National Library of Medicine - MEDLINE [www.ncbi.nlm.nih.gov/PubMed](http://www.ncbi.nlm.nih.gov/PubMed)
55. Canadian Center for Evidence in Health [www.cche.net](http://www.cche.net)
56. Center for Disease Control and Prevention [www.cdc.gov](http://www.cdc.gov)
57. Public Health Center of the Ministry of Health of Ukraine [www.phc.org.ua](http://www.phc.org.ua)
58. Ukrainian database of medical and statistical information "Health for all":

<http://medstat.gov.ua/ukr/news.html?id=203>

59. British Medical Journal [www.bmj.com](http://www.bmj.com)

60. Journal of Evidence-Based Medicine [www.evidence-basedmedicine.com](http://www.evidence-basedmedicine.com)

61. [http: zakon3.rada.ua/lows](http://zakon3.rada.ua/lows)

62. [http: mozdocs.riev.ua](http://mozdocs.riev.ua)

63. [http: euro.who.inf](http://euro.who.inf)

64. [www.moz.gov.ua](http://www.moz.gov.ua)