


**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
STATE UNIVERSITY  
"UZHGOROD NATIONAL UNIVERSITY"  
MEDICAL FACULTY 2  
DEPARTMENT OF PUBLIC HEALTH AND HUMANITARIAN DISCIPLINES**

**"APPROVED"**  
Dean of the Medical Faculty 2  
Vasyl KALIY  
"30" June 2025

**CC54. SOCIAL MEDICINE, PUBLIC HEALTH AND HYGIENE**

Educational level	<b>Second (Master)</b>
Subject area	<b>22 "Health" / I "Health and Social Welfare"</b>
Specialty	<b>222 "Medicine" / I2 "Medicine"</b>
Educational program	<b>"General Medicine"</b>
Discipline status	<b>Compulsory</b>
The language of instruction	<b>English</b>

**Social medicine, public health and hygiene** working program for international students with English language of studying, the studying direction 22 “Health Care”, specialty 222 “Medicine”, educational program “General Medicine”

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The work program is approved at the meeting of the Department of Public Health and Humanitarian Disciplines

Protocol № 011 from « 13 » June 2025

Head of the Department of Public Health and Humanitarian Disciplines

 Associative Professor Pohoriliak R. Yu.

Approved by the Scientific and Methodical Commission of the Medical Faculty 2

Protocol № 10 from « 16 » June 2025

Head of the Scientific and Methodical Commission  Malets N.B.

## 1. DESCRIPTION OF THE EDUCATIONAL SUBJECT

<b>Name of indicators</b>	<b>Distribution of academic hours according to the curriculum</b>	
	Extramural form of study	Extramural form of Study
ECTS credits – 5	Year of training:	
Total number of hours – 150	3,4	3,4
Number of modules – 3	Semester:	
Weekly academic hours for full-time study:  class-room academic hours – 2,5  student's self-study hours – 1	6,7	6,7
	Lectures:	
	30	30
	Practical classes (seminars):	
	70	70
Type of final control: exam	Laboratory classes:	
	-	-
Form of final control: complex	Self-study:	
	50	50

## 2. PURPOSE OF THE EDUCATIONAL SUBJECT

The purpose of studying the discipline «Social Medicine and Public Health» is to introduce a new educational paradigm for training future medical masters in the context of global societal changes and healthcare system reform, incorporating innovative approaches to addressing public health challenges.

In accordance with the educational program, studying this discipline fosters the following competencies among higher education students:

### **General Competencies:**

- GC 1. Ability for abstract thinking, analysis, and synthesis.
- GC 2. Capacity to learn and acquire modern knowledge.
- GC 3. Ability to apply knowledge in practical situations.
- GC 4. Knowledge and understanding of the subject area and professional activity.
- GC 5. Adaptability and ability to act in new situations.
- GC 6. Ability to make informed decisions.
- GC 7. Teamwork skills.
- GC 10. Proficiency in utilizing information and communication technologies (ICT).
- GC 11. Skills in applying ICT.
- GC 12. Determination and persistence in accomplishing assigned tasks and fulfilling obligations.
- GC 13. Awareness of equal opportunities and gender issues.
- GC 14. Ability to exercise rights and responsibilities as a member of society, recognizing the values of a democratic society, the need for sustainable development, the rule of law, and the protection of human rights and freedoms in Ukraine.
- GC 15. Capacity to act based on ethical considerations.

### **Professional Competencies:**

- PC 1. Ability to collect medical information about a patient and analyze clinical data.
- PC 11. Capacity to resolve medical issues in new or unfamiliar settings with incomplete or limited information, considering social and ethical responsibility.
- PC 13. Ability to implement sanitary-hygienic and preventive measures.
- PC 14. Capacity to plan preventive and anti-epidemic measures for infectious diseases.
- PC 15. Ability to conduct assessments of work capacity.
- PC 16. Competence in maintaining medical documentation, including electronic forms.
- PC 17. Ability to evaluate the impact of environmental, socio-economic, and biological determinants on the health of individuals, families, and populations.
- PC 18. Skills in analyzing the activities of healthcare providers, units, and institutions, ensuring the quality of medical care and optimizing the use of medical resources.
- PC 19. Ability to organize and integrate medical care delivery to the population and conduct healthcare service marketing.
- PC 20. Skills in conducting epidemiological and medical-statistical studies of population health, as well as processing social, economic, and medical data.
- PC 21. Ability to clearly and unambiguously communicate knowledge, conclusions, and arguments regarding healthcare issues to professionals and non-specialists, including learners.
- PC 22. Capacity to manage complex, unpredictable work processes in the healthcare field that require new strategic approaches.
- PC 23. Ability to develop and implement scientific and applied projects in healthcare.
- PC 24. Adherence to ethical principles in working with patients and laboratory animals.
- PC 25. Commitment to professional and academic integrity, with accountability for the reliability of scientific results obtained.

### 3. PREREQUISITES FOR STUDYING THE EDUCATIONAL SUBJECT

The prerequisites for studying the educational subject «**Social medicine, public health**» are mastering the following educational subjects (ES) of the educational program (EP):

CC 17 – Hygiene and Ecology

CC 18 – Medical informatics

ES 1 – Elective course within social-humanitarian cycle

### 4. EXPECTED LEARNING OUTCOMES

According to the educational program «General Medicine», the study of the educational subjects should ensure the achievement of the following program learning outcomes (PLO) by higher education seekers:

<b>Program learning outcomes</b>	<b>PLO code</b>
To have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require knowledge updating and integration. To be responsible for professional development as well as to be able to carry out further professional training with a high level of autonomy.	PLO 1
To have 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 as well as related interdisciplinary problems.	PLO 3
To design rational medical routes for patients; organize interaction with colleagues at one's own workplace and other institutions and organizations; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, within the functioning health care facility, its unit, in a competitive environment.	PLO 16
To determine the state of functioning and limitations of a person's vital activities and the duration of work incapacity with the preparation of relevant documents, within a health care facility, based on data about the disease and its history, peculiarities of the person's professional activity, etc. To maintain medical documentation regarding the patient and the contingent of the population on the basis of the regulatory documents.	PLO 18
To plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.	PLO 19
To search for necessary information in professional literature and databases, other sources, analyze, evaluate and apply this information.	PLO 21
To utilize modern digital technologies, specialized software, and statistical methods of data analysis in order to solve complex healthcare problems.	PLO 22
To 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 staff taking into account the acquired skills of effective teamwork, leadership positions, appropriate quality, accessibility and justice, ensuring the provision of integrated medical care.	PLO 26

To make effective decisions on health care issues, assess the necessary resources, take into account social, economic and ethical consequences.	PLO 28
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Expected learning outcomes (ELO) that should be achieved by students after mastering the discipline «**Social medicine, public health**»:

<b>ELO code</b>	<b>Expected learning outcomes of the discipline</b>	<b>PLO code</b>
ELO 1	Sufficient knowledge of information about the state of health of the population, about the activities of the health care system, the ability to correctly analyze and interpret them. Be able to correctly formulate a statistical conclusion and scientifically justify relevant recommendations based on the acquired knowledge of standard procedures, including modern computer information technologies for processing medical information.	PLO 1
ELO 3	The ability to choose the design of a statistical study, draw up its plan and program, carry out their implementation and substantiate the conclusions. To be able to develop and scientifically justify the need to implement recommendations in accordance with the set goals.	PLO 3
ELO 16	To know the peculiarities of medical care of the population in the modern conditions of reforming the health care system. Be able to calculate and evaluate the main indicators of a doctor's and health care provider's activity, identify activity defects and the reasons for their formation, and based on them justify management decisions regarding the improvement of the activity of a doctor and a health care institution in the conditions of market relations.	PLO 16
ELO 18	To know the peculiarities of the organization of the examination of the loss of working capacity, to be able to interact with the head of the unit, the medical and advisory commission (MCC), the medical and social expert commission (MSEK) on issues of the examination of working capacity. On the basis of knowledge of the main regulatory documents regulating the establishment of the type, degree and duration of incapacity for work, in a simulated clinical and organizational situation, on the basis of data on the disease and its course, to be able to determine the presence and severity of life restrictions, the type, degree and duration of incapacity for work. Be able to draw up relevant documents certifying the loss of working capacity.	PLO 18
ELO 19	Possess knowledge and operate skills in statistics and epidemiology, which are the basis for scientifically based medical practice. To be able to find and interpret the necessary information about the health of the population and the factors that affect it. Be able to calculate, analyze and use the necessary epidemiological indicators in everyday practice.	PLO 19
ELO 21	Have basic knowledge of information and software when conducting and evaluating statistical research in health care. having the necessary	PLO 21

	knowledge of information search. To be able to choose from numerous statistical application programs the most adequate for this research.	
ELO 22	Applying basic data processing methods to identify existing problems in the health system and the health of the population, defects in determining the content of scientific research, to be able to put forward the main hypothesis, the direction of the research and its purpose, to formulate its main tasks for qualitative statistical analysis and obtaining reliable results.	PLO 22
ELO 26	To have knowledge about the modern idea of management in security health and the roles of managers in healthcare institutions. know the basic requirements for the management process. On the basis of knowledge about the theories and methods of making managerial decisions, be able to create the necessary conditions for their launch and implementation when conducting managerial practice in the field of health care.	PLO 26
ELO 28	On the basis of knowledge about the stages and essence of economic analysis, be able to determine the main economic problems in the field of health care (OH), be able to apply knowledge about the principles of collection, analysis and use of information in planning the health care system. To know the mechanism and features of the pricing of medical services in market conditions at the stage of modern reform of the medical industry.	PLO 28

## **5. DIAGNOSTIC TOOLS AND EVALUATION CRITERIA OF LEARNING OUTCOMES**

### **Means of assessment and methods of demonstrating learning outcomes**

Means of assessment and methods of demonstrating learning outcomes in the discipline are:

ELO 1	Test control, oral survey.
ELO 3	Test control, oral survey, situational tasks - drawing up a statistical research plan on a given topic.
ELO 16	Test control, oral survey, situational task for assessing the quality of medical care and calculating performance indicators of a health care facility, unit or individual doctor.
ELO 18	Test control, oral survey, situational task on determining the type of disability and the term of its certification, filling out accounting documents.
ELO 19	Test control, oral survey.
ELO 21	Test control, oral or written survey.
ELO 22	Test control, oral survey, business plan development:
ELO 26	Test control, oral or written survey.
ELO 28	Test control, oral or written survey.

## Forms of control and criteria for learning outcomes evaluation

Forms of current control: oral, written, tests.

Form of module control: written, tests.

Form of final semester control: exam

### Distribution of points received by higher education seekers (module I)

Current assessment and self-study										Module test	Sum
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	80	
12	12	12	12	12	12	12	12	12	12		

T1-T10 – № topics

### Distribution of points received by higher education seekers (module II)

Current assessment and self-study								Module test	Sum
T1	T2	T3	T4	T5	T6	T7	T8	80	
15	15	15	15	15	15	15	15		

T1-T9 – № topics

### Distribution of points received by higher education seekers (module III)

Current assessment and self-study															Module test	Sum
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	80	200
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		

T1-T14 – № topics

### Evaluation of certain types of educational work in the discipline

Type of activity of the higher education seeker	Module 1		Module 2		Module 3	
	Number	Maximum number of points (total)	Number	Maximum number of points (total)	Number	Maximum number of points (total)
Practical classes (seminars)	10	120	8	120	14	120
Module test	1	80	1	80	1	80
<b>Total</b>	<b>11</b>	<b>200</b>	<b>9</b>	<b>200</b>	<b>15</b>	<b>200</b>

### Criteria of current educational activity evaluation

- The grade «*excellent*» (180-200 points) is awarded to students who actively participated in the discussion of the most complicated issues on the studied topic, gave at least 90% correct answers to standardized test tasks, completed written tasks without errors, completed practical tasks and properly presented their results.
- The grade «*good*» (148-179 points) is awarded to students who participated in the discussion of the most complicated issues on the studied topic, gave at least 74% correct answers to standardized test tasks, made some minor mistakes in answers to written tasks, completed practical tasks and properly presented their results.

- The grade «*satisfactory*» (120-147 points) is awarded to students who participated in the discussion of the most complicated issues on the studied topic, gave at least 60% correct answers to standardized test tasks, made significant mistakes in answers to written tasks, completed practical tasks and properly presented their results.
- The grade «*unsatisfactory*» (0-119 points) is awarded to students who did not participate in the discussion of the most complicated issues on the studied topic, gave less than 60% correct answers to standardized test tasks, made gross mistakes in answers to written tasks or did not answer them at all, did not complete practical tasks and did not properly present their results.

### **Criteria for module test evaluation**

- A module test is done by completing prepared tasks (test cards) with different cards having the same difficulty level. All students are allowed to complete the module test, regardless of the current assessment's results and the presence of unfulfilled missed practical classes. The period of 1.5 hours is given to complete the entire module test. It is forbidden to use any information sources while completing the module test.
- The grade «*excellent*» (180-200 points) is awarded to students who gave at least 90% correct answers to standardized test tasks and completed written tasks without errors.
- The grade «*good*» (148-179 points) is awarded to students who gave at least 74% of the correct answers to standardized test tasks and made some minor mistakes in the answers to written tasks.
- A student who gave at least 60% of the correct answers to standardized test tasks and made significant mistakes in the answers to written tasks receives the grade «*satisfactory*» (120-147 points).
- The grade «*unsatisfactory*» (0-119 points) is awarded to students who gave less than 60% correct answers to standardized test tasks, made gross errors in answers to written tasks, or did not provide answers to the designed written tasks.

### **Criteria for the final semester control evaluation**

The final semester rating is calculated as the arithmetic average of three modules. According to the Regulation on the assessment of students' educational achievements according to the credit-module system, if the final module grade is at least 120 points, then with the consent of the student, it can be counted as the final (semester) grade for the academic discipline. Students who are not satisfied with the final positive grades given by the teacher based on the results of module tests, as well as those who received «*unsatisfactory*» grades and at the same time have no unfulfilled practical (laboratory) classes, have the right to take a credit (exam) in the discipline. Full-time students are admitted to the final (semester) control of a specific discipline in the form of a credit or exam if, based on the results of the module tests, they scored at least 35 per cent of the possible points. Based on the results of the answers given during the exam/credit, a grade is awarded according to a 200-point scale. Regardless of whether the student takes the exam (credit) because their final module grade is unsatisfactory (70-119 points) or to increase the positive grade, the teacher gives the student a grade based solely on the level of their knowledge, demonstrated during the exam (credit), that is, based on 200 points, but the final (semester) grade cannot be lower than the final module grade.

### **Criteria for the module final semester control evaluation**

- the grade «*excellent*» (180-200 points, A) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material; are able to independently perform the tasks prescribed by the syllabus, apply the acquired knowledge

and skills in non-standard situations; learned the basic and familiarized themselves with the additional literature recommended by the program; mastered the interrelationship of the main concepts of the discipline and are aware of their importance for the profession they acquire; freely express their own opinions, independently evaluate various life phenomena and facts, revealing their personal position; independently determine the individual goals of their own educational activity, revealed creative abilities and used them when studying the syllabus material, as well as demonstrated interest to scientific work.

- grade «*good*» (164-179 points, B) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material, including applying it in practice, have sufficient systematic knowledge in accordance with the syllabus material, apply it reasonably in different situations; have the ability to independently search for information, as well as to analyze, set and solve professionally oriented problems; while answering the exam/credit questions they might have some inaccuracies, with correcting those themselves. The student should also be able to choose convincing arguments to confirm the studied material;
- the grade «*good*» (148-163 points, C) is awarded to students who: completed the work in general, but during the final control make a certain number of mistakes; are able to compare, generalize, systematize information under the guidance of a teacher, in general independently apply it in practice, control their own activities; learned the curriculum material, successfully completed the tasks prescribed by the program, familiarized themselves with the basic literature recommended by the program;
- the grade «*satisfactory*» (128-147 points, D) is awarded to students who: know the basic syllabus material to the extent necessary for further study and its use in the future profession; perform tasks well, but with a significant number of errors; familiarized themselves with the basic literature recommended by the syllabus; make mistakes when completing tasks during classes or exams but find ways to correct them under the guidance of the teacher.
- the grade «*satisfactory*» (120-127 points, E) to students who: have basic knowledge of educational and syllabus material in the amount necessary for further study and its application in the future profession, and the performance of tasks meets the minimal criteria. Knowledge is reproductive in nature.
- grade «*unsatisfactory*» (70-119 points, FX) is awarded to students who: revealed significant gaps in the knowledge of the main syllabus material and made fundamental mistakes during the completion of tasks provided by the syllabus.
- grade «*unsatisfactory*» (0-69 points, F) is awarded to students who learned the educational material only at the level of elementary recognition and reproduction of individual facts or did not learn it at all; made gross errors when completing the tasks provided by the syllabus; cannot continue their studies and are not ready for professional activity after graduating from the university without re-studying this discipline.

## 6. SYLLABUS

### 6.1. The content of the discipline

#### Module 1

##### **Topic 1. Design and Organization of Statistical Studies**

Definition of the main concepts of «statistics» and «biostatistics». The role of biostatistics in the healthcare system. The connection of biostatistics with other sciences. Theoretical foundations and subject matter of medical statistics. The role of medical statistics in the development of healthcare. Stages of statistical research and their characteristics. Methods of statistical studies. Statistical tables, their types, and construction features.

## **Topic 2. Methods of Collecting Statistical Data. Types of Primary Data. Statistical Populations**

Methods of collecting statistical data during statistical studies. Types of data and their classification. Measurement scales and their applications. Types of statistical populations, their properties, and requirements. Methodology for calculating the required sample size for statistical studies.

## **Topic 3. Relative Values. Graphical Analysis Methods**

The significance of absolute values and their applications. Types of relative values and methods of calculation. Key approaches to using relative values in medical practice. Common errors in using relative values. Classification of graphical representations of statistical data. Rules for constructing various types of graphical representations. Approaches to correctly using specific types of charts to represent corresponding statistical values. Common errors in graphical representations. Infographics. Modern information technologies for improving graphical representations of statistical data.

## **Topic 4. Mean Values. Variational Series and Types of Distributions**

Mean values, their types, and features of their use in medical practice. Requirements for statistical data when determining mean values. Methodology for compiling variational series. Properties of the arithmetic mean and its calculation method. Variation of traits and measures of variability. Practical significance of standard deviation and coefficient of variation. Common errors in calculating variability parameters.

## **Topic 5. Estimating the Reliability of Statistical Hypotheses**

Statistical hypotheses and the probability of error-free forecasting. Statistical error and its calculation methodology. Establishing confidence limits and intervals. Characteristics of related and independent populations. Methodology for evaluating the reliability of differences between indicators. Features of using parametric and non-parametric criteria to assess reliability.

## **Topic 6. Time Series and Their Analysis**

Definition of the concept of «time series». Classification of time series. Characteristics of time series. Application of methods for smoothing time series. Application of extrapolation and interpolation methods.

## **Topic 7. Standardization Method**

Practical application of standardization methods in healthcare. Types of standardization methods. Source data for standardization. Stages of direct standardization. Criteria for evaluating standardization results. Features of using indirect and reverse standardization methods.

## **Topic 8. Analysis of Relationships Between Parameters of Statistical Populations**

Definitions of «functional relationship» and «correlation relationship». Types and parameters of correlation relationships. Characteristics of the form, strength, and direction of the relationship. Applications and methodology for calculating rank and linear correlation coefficients. Conditions for using Spearman and Pearson coefficients. Pair and multiple correlation coefficients. Reliability assessment of the correlation coefficient. Application of regression analysis in practical medicine. Methodology for calculating the regression coefficient. Regression equation.

## **Topic 9. Epidemiological Methods for Studying Diseases**

Definition of «epidemiology», its main goals, and objectives. The importance of epidemiological research results in a physician's practical activity. Epidemiological approach to studying diseases: the concept of causality in disease occurrence, sufficient, contributory, and necessary causes. The

importance of risk factors for health and disease occurrence. Modifiable and non-modifiable risk factors. Classification and comparative characteristics of main epidemiological research methods. Scope of application of diagnostic and screening tests in epidemiological studies. Evaluation of diagnostic (screening) tests. Analysis of epidemiological study results. Errors in epidemiological studies.

### **Topic 10. Evidence-Based Medicine**

The essence of the concept of «evidence-based medicine» and its importance for the healthcare system. Principles of evidence-based medicine. Classification of scientific studies by research objectives and levels of evidence. Hierarchy of evidence. Evaluation of the methodology and reliability of scientific research results. Evidence-based medicine as a foundation for improving the quality of healthcare. Approaches to implementing evidence-based medicine. Application of evidence-based medicine in a physician's practical activity.

## **Module 2**

### **Topic 1. Epidemiological Surveillance and Assessment of Health and Well-Being**

Definition of «public health», various approaches to its interpretation. Goals and objectives of public health and social medicine in a broad sense. Constitutional articles on health care. Principles of health care and principles of public health. Main tasks of public health. Content of public health, model of implementation of the public health system. Main functions of public health and their practical significance. Relevance of epidemiological surveillance and health and well-being assessment. Goals and objectives of epidemiological surveillance. Types and structural elements of epidemiological surveillance. Sources of epidemiological data. Methodology for conducting epidemiological surveillance. Requirements for conducting epidemiological surveillance and health and well-being assessments. Criteria for evaluating the epidemiological surveillance system.

### **Topic 2. Comprehensive Assessment of Population Health. Methods for Studying and Evaluating Factors Influencing Population Health**

Components of the concept of «health». Conceptual models of health. Categories of health. Criteria for assessing population health. Health indices, their essence, and significance. Human development index, its characteristics, and practical significance for medical practice. Population resilience coefficient, its characteristics, and practical significance for medical practice. Major groups of factors influencing health and their comparative characteristics. Classification of risk factors for disease development. Lifestyle as a leading factor influencing population health. Level, quality, and style of life. Environmental condition as a factor influencing health. Current issues of environmental pollution. The significance of heredity in health formation. The state of medical care as a factor influencing health. Characteristics of the influence of factors on demographic indicators. Population health indicators and those of specific groups. The impact of population aging on health.

### **Topic 3. Methods for Studying and Evaluating Key Demographic Indicators of Natural Population Movement. Analysis of the Demographic Situation**

Demography as a science, subject, and content of demography, main tasks, and sections. Medical and social aspects of demographic processes, issues of population reproduction. The significance of demographic data for health care practice. Mechanical population movement, its types, and significance. Features of population migration in Ukraine at the current stage. The impact of migration on the organization and quality of medical care in the context of health care reform. Natural population movement, documents for its study. Indicators of natural population movement, methodology for their calculation. Characteristics of birth rates in Ukraine. Comparative characteristics of birth rate indicators and methodology for their calculation. Factors

influencing birth rates. General mortality. Dynamics and main causes of mortality in Ukraine. Age-specific mortality rates and those from specific diseases. The concept of life expectancy (LE), its trends in Ukraine. Marriages and divorces and their impact on the demographic situation in Ukraine. Characteristics of current demographic trends in Ukraine and worldwide.

#### **Topic 4. Methods for Studying and Evaluating Infant Mortality Indicators**

Characteristics of infant mortality, its causes, and age-specific features. Main trends in Ukraine and worldwide. General infant mortality rate, calculation specifics. Specific infant mortality rates: neonatal and early neonatal mortality. Calculation specifics of postneonatal mortality. Perinatal mortality, classification, and calculation specifics of its age-related indicators. Main criteria for live birth. Causes and ways to reduce infant mortality. Maternal mortality, calculation methodology, and ways to reduce it.

#### **Topic 5. Methods for Studying and Evaluating General Morbidity Indicators**

The significance of population morbidity statistics for practical health care. Classification of morbidity study methods, their comparative characteristics, factors influencing the completeness of morbidity information. Types of morbidity and their general characteristics. The concepts of «primary morbidity», «prevalence of diseases», «pathological affection». Comparative characteristics of various types of morbidity: definition of the concept, unit of observation, recordkeeping organization, rules for filling out recordkeeping documents, indicators. Levels and structure of primary morbidity and prevalence of diseases in Ukraine, regional features in Zakarpattia region, morbidity features of specific population groups (age, gender, occupational, urban and rural populations). International nomenclature and classification of diseases, injuries, and causes of death in the tenth (ICD-10) and eleventh (ICD-11) revisions: principles of structure and significance for studying morbidity. International Classification of Primary Care System (ICPC-2).

#### **Topic 6. Methods for Studying and Evaluating Indicators of Morbidity from Socially Significant Diseases**

Morbidity from socially significant diseases: list of nosological forms, recordkeeping documents, and their route, main indicators. Medical and social significance of socially significant diseases in forming key health indicators in Ukraine and worldwide. Current trends in morbidity from cardiovascular diseases, leading risk factors for their occurrence, and prevention measures. The place and dynamics of malignant neoplasms in the structure of morbidity and mortality in Ukraine and worldwide, gender and age-specific features of prevalence of their individual nosological forms. The problem of tuberculosis prevalence in Ukraine and worldwide, trends, and prognosis. Diabetes mellitus as one of the pressing issues of modern health care. Trends and causes of trauma globally and in Ukraine, main areas of prevention. Medical and social significance of HIV/AIDS, main global trends in the pandemic, and prevention methods. COVID-19 pandemic: scale, trends, approaches to containment and overcoming. Mental disorders, causes of their occurrence, and main prevalence trends. Alcoholism and drug addiction as a medical and social problem. Regional features of the prevalence of socially significant diseases in the Zakarpattia region.

#### **Topic 7. Stress and Conflicts. Mechanisms for Protecting People from Stress**

Types and signs of stress. Prevalence of stressful situations in society, their causes. The impact of stressful situations on health. Types and forms of conflicts, their consequences. Causes of conflicts and phases of their development. Methods of conflict resolution. Measures for protecting people from stress. Psychoprophylaxis. Strategies and measures to counteract the negative impact of stress on population health.

#### **Topic 8. Health Promotion. Types of Prevention, Methods, and Means of Health Education**

Health promotion. WHO policies on health support. Main strategic documents on health promotion. Main directions of health promotion. The concept of prevention, its types, and their comparative characteristics. Components of lifestyle and leading factors that negatively impact health. Healthy lifestyle (HLS) and the conditions that define it. Directions and measures for forming an HLS. Health care institutions, departments, and services involved in forming an HLS, their interaction, and collaboration to strengthen individual and population health. Methods and means of health education and upbringing. Features and advantages of various methods of hygienic education and upbringing. Features and advantages of various means of propagating hygienic knowledge.

### **Module 3.**

#### **Topic 1: Models of Healthcare Systems**

Theories of systems in healthcare: concepts, essence, and purpose of systems. Classification of systems and their characteristics. Components and main functional processes of managed systems. Organizational-functional cycles of systems. System-forming and system-stabilizing factors of managed systems. Healthcare as a system. Domestic and international healthcare systems, their development, features, and comparative characteristics. Prerequisites for healthcare reform in Ukraine: relevance, main directions, and characteristics.

#### **Topic 2: Basics of Medical Insurance**

Definition of key terms «medical insurance» and «insurance medicine». Purpose, tasks, and main features of insurance medicine. Subjects and objects of medical insurance. Essence of mandatory and voluntary medical insurance and their comparative characteristics. Economic categories of medical insurance. The role and place of insurance reserves in forming insurance funds.

#### **Topic 3: Main Types of Medical Care. The Role of NHSU in Organizing Different Types of Medical Services**

Classification of medical care types by complexity and features of provision, with definitions of key concepts. Leading principles of medical care development as a core component of the healthcare system. Law of Ukraine 2347-IX: content and significance for healthcare reform. Classification of healthcare institutions and their role in medical service delivery. Organization of a capable network of healthcare facilities, their functions, and features of different types of medical care provision. National Health Service of Ukraine (NHSU): structure and role in organizing medical services under modern conditions. Medical Guarantee Program: its essence and implementation in healthcare reforms. Human resource planning in healthcare. Accreditation and licensing of healthcare institutions: methods, responsible persons, and tasks.

#### **Topic 4: Organization of Primary Healthcare**

Primary healthcare (PHC): characteristics and significance for the healthcare system. Principles and foundations of PHC. General practitioner/family doctor: functions, key tasks, and challenges in practice. Pre-medical care and its importance, especially for rural populations. Issues of PHC development in Ukraine. Organization of family medicine systems in various countries: types and comparative characteristics. PHC organization during reforms, declaration concepts. Classification and tasks of healthcare facilities providing PHC. List of services, diagnostic interventions, and required equipment according to the Medical Guarantee Program (MGP). Essential documentation for general practitioners and its practical importance.

#### **Topic 5: Organization of Emergency Medical Care and the State Disaster Medicine Service**

Directions of reorganization of emergency medical care (EMC) and prerequisites for reform. Importance of EMC for the healthcare system, stages of provision. Emergency Medical Care Station (EMCS): functions, rights, tasks, and the role of paramedic teams. Scope of services under

MGP. State Disaster Medicine Service: tasks, management levels, and emergency response measures at each level.

### **Topic 6: Organization of a Capable Network of Healthcare Institutions for Specialized Medical Care**

Specialized medical care: classification of types and institutions providing it. Regulatory and legal basis for organizing a capable network of healthcare facilities. Types of institutions, their tasks, and functions in providing specialized care. Role of polyclinics in outpatient and hospital care within hospital districts. Structure, tasks, and personnel requirements of polyclinics. Main sections of polyclinic operations, the role of registration services. Medical rehabilitation in polyclinics: types and methods. WHO recommendations for modern hospital functions. Inpatient care under MGP. Hospitalization levels, conditions, and indications. Structure and tasks of inpatient facilities, service content, and collaboration with outpatient care.

### **Topic 7: Organization of Obstetric-Gynecological and Pediatric Care**

State Maternal and Child Health Service: goals, tasks, and legal framework. Reproductive health: issues, determinants, and protection aspects. Principles of healthcare for women and children. Modern principles of obstetric-gynecological care and regulatory support. Outpatient obstetric-gynecological care: essence and facilities. Pregnancy management under MGP. Criteria for assessing pregnant women's health and forming monitoring groups. Medical-genetic counseling: indications, levels, and facilities. Specialized obstetric-gynecological care: conditions and indications for hospitalization, levels of care. Tasks of neonatal departments and ensuring the «warm chain» Healthcare for children and adolescents: principles and organization in various institutions. Preventive measures for school readiness and periodic health checks.

### **Topic 8: Types of Medical Expertise and Organization of Medical-Social Expertise for Temporary Disability**

Types of medical expertise and their characteristics. Concepts of disability and degrees of loss of capacity. Temporary disability: main documents and procedures. Functions of doctors during medical-social expertise. Medical Consulting Commission (MCC): structure, functions, and work organization. Procedure and regulations for temporary disability expertise, including modern guidelines (e.g., Instruction No. 455).

### **Topic 9: Medical-Social Aspects of Disability and Analysis of Disability Indicators**

Disability as a health indicator. Social significance of disability. Types of disability, causes, and risk factors. Indicators of disability, comparative characteristics, and calculation methods. Structure and dynamics of disability statistics in Ukraine and globally. Rehabilitation programs for persons with disabilities: implementation challenges and preventive measures.

### **Topic 10: Organization of Medical-Social Expertise for Permanent Disability**

Procedures and features of permanent disability expertise. Medical-Social Expert Commission (MSEC): organization, functions, and documentation. Criteria for determining permanent disability groups, terms for reassessment, and referral process. Collaboration between MAC and MSEC.

### **Topic 11: Analysis of Healthcare Institutions and Quality of Medical Services. Standardization in Healthcare**

Quality of medical care: characteristics and evidence-based methods. Conceptual models of quality management and their comparison. Healthcare standardization: development and application of treatment standards. Quality control of medical care at institutional levels. Indicators and methods for evaluating the quality and effectiveness of services. Documentation and reporting for monitoring and improvement.

**Topic 12. Scientific Foundations of Management. Marketing in Healthcare.**

Fundamental principles and laws of management science. Evolution of management as a science. Factors influencing the complexity and facilitation of healthcare management. Components of management science, its main methods, principles, and laws. Management system: definition and its key components. Theory of management systems. Practical significance of a comprehensive approach to improving the management system and aspects of a systematic approach. Types of management operations and procedures. Functions and phases of the management process. Definition of a healthcare organization's mission and the peculiarities of its organizational structure. The essence of marketing and its key concepts. Characteristics of the main conceptual approaches to marketing management and its main stages. Marketing in healthcare and the types of marketing specific to it. The nature of medical services and their properties. Specifics of marketing in different demand scenarios for medical services.

**Topic 13. Management and Leadership in Healthcare.**

Definition of key concepts and their characteristics. Human resource policy in the healthcare system. Human resource management: modern concepts of personnel management and its key principles. Modern technologies for managing personnel in medical organizations: hiring, performance appraisal. Managing the behavior of medical organization personnel, management tools, and styles. Basics of personnel planning: main aspects of planning in the healthcare system, its types, and both general economic and managerial aspects. Planning for personnel needs and its structure. Features of organizing the work of medical organization staff. Scientific organization of labor and its specifics. Peculiarities and specifics of managerial labor. Characteristics and criteria for evaluating managers and their role in healthcare organizations.

**Topic 14. Entrepreneurial Activity in Healthcare. Finances in the Healthcare System.**

The essence of entrepreneurship and the regulation of entrepreneurial activity. Characteristics and types of organizational and legal forms of entrepreneurial activity in healthcare. Associations in the healthcare sector. Methodology for developing a business plan and its role in entrepreneurial activity in healthcare. Financial models of capital management: definition of key concepts and their comparative characteristics. The essence, features, and characteristics of finance. Sources of funding in the healthcare system. The budget and mechanisms of its formation in Ukraine. Strategies for financing healthcare systems.

**Topic 15. Module III.****6.2. The structure of the discipline**

Titles of content modules and topics	Number of hours					
	Form of study:					
	Total	including				
lectures		practical classes (seminars)	laboratory classes	individual work	self-Study	
<b>I semester</b>						
<b>Module 1. Basics of medical statistics.</b>						
Topic 1. Design and Organization of Statistical Studies.	4		2			2

Topic 2. Methods of Collecting Statistical Data. Types of Primary Data. Statistical Populations.	4		2			2
Topic 3. Relative Quantities. Graphical Methods of Analysis.	4		2			2
Topic 4. Measures of Central Tendency. Variability and Types of Distribution.	2		2			
Topic 5. Estimation of Statistical Hypotheses' Likelihood.	4		2			2
Topic 6. Time Series and Their Analysis.	2		2			
Topic 7. Standardization Method.	2		2			
Topic 8. Analysis of Relationships Between Parameters of Statistical Populations.	2		2			
Topic 9. Epidemiological Methods for Studying Diseases.	4		2			2
Topic 10. Evidence-Based Medicine.	2		2			
Topic 11. Final module control 1	2		2			
Lecture №1. The Importance of Biostatistics for the Practical Healthcare System.	2	2				
Lecture №2. Methodological Foundations of Organizing Biostatistical Research, Their Information and Software Support.	2	2				
Lecture №3. Epidemiological Methods for Studying Diseases.	2	2				
Lecture №4. Fundamentals of Evidence-Based Medicine.	2	2				
<b>Total for the module</b>	<b>40</b>	<b>8</b>	<b>22</b>			<b>10</b>
<b>Module 2</b>						
Topic 1. Epidemiological Surveillance and Evaluation of Health and Well-being.	4		2			2
Topic 2. Methodology for Studying and Assessing Factors Affecting Population Health. Comprehensive Health Assessment of the Population.	4		2			2
Topic 3. Methodology for Studying and Assessing Key Demographic Indicators of Natural Population Movement. Analysis of Demographic Situation.	4		2			2
Topic 4. Methodology for Studying and Assessing Infant Mortality Indicators.	4		2			2
Topic 5. Methodology for Studying and Assessing General Morbidity Indicators.	4		2			2
Topic 6. Methodology for Studying and Assessing Morbidity Indicators of Major Socially Significant Diseases.	4		2			2
Topic 7. Stress and Conflicts. Mechanisms for Protecting People from the Effects of Stress.	4		2			2
Topic 8. Health Promotion. Types of Prevention, Methods and Tools of Sanitary	4		2			2

Education.						
Topic 9. Final module control 2	2		2			
Lecture №5. Introduction to Public Health.	2	2				
Lecture № 6. Medical and Social Aspects of Population Morbidity.	2	2				
Lecture №7. Concept of Major Socially Significant Diseases.	2	2				
Lecture №8. Impact of Stress on Population Health.	2	2				
Lecture №9. Preventive Activities of the Health Care System.	2	2				
Lecture 10. Socio-medical Issues of Reproductive Health. Organization of Medical Care in the Maternal and Child Health System.	2	2				
<b>Total for the module</b>	<b>46</b>	<b>12</b>	<b>18</b>			<b>16</b>
<b>Total for the semester</b>	<b>86</b>	<b>20</b>	<b>40</b>			<b>26</b>
<b>II semester</b>						
<b>Module 3</b>						
Topic 1. Health Care System Models.	4		2			2
Topic 2. Fundamentals of Health Insurance.	4		2			2
Topic 3. Main Types of Medical Care. The Role of the National Health Service of Ukraine (NSZU) in Organizing Different Types of Health Care for the Population.	2		2			
Topic 4. Organization of Primary Health Care for the Population.	2		2			
Topic 5. Organization of Emergency Medical Care for the Population. The State Emergency Medical Service and Its Role in the Health Care System.	4		2			2
Topic 6. Organization of a Capable Network of Health Care Facilities Providing Specialized Medical Care.	2		2			
Topic 7. Organization of Obstetric and Gynecological Care and Pediatric Medical Care.	4		2			2
Topic 8. Types of Medical Expertise. Organization of Medical and Social Expertise of Temporary Disability.	2		2			
Topic 9. Organization of Medical and Social Expertise of Permanent Disability.	2		2			
Topic 10. Medical and Social Aspects of Disability. Importance and Analysis of Disability Indicators.	4		2			2
Topic 11. Analysis of Health Care Facility Activities and Assessment of Medical Care Quality. Standardization in Health Care.	4		2			2

Topic 12. Scientific Foundations of Management. Marketing in Health Care Systems.	2		2			
Topic 13. Management and Leadership in Health Care.	4		2			
Topic 14. Entrepreneurial Activities in Health Care. Finance in Health Care Systems.	4		2			2
Topic 15. Final module control	12		2			10
Lecture №1. Modern Perspectives on Providing Different Types of Medical Care to the Population.	2	2				
Lecture №2. Healthcare Financing Strategies. The Medical Guarantee Program in Ukraine.	2	2				
Lecture №3. Socio-medical Aspects of Disability and Temporary Work Incapacity. Modern Features of Organizing Work Capacity Loss Expertise.	2	2				
Lecture №4. Healthcare Quality Management. Marketing in the Healthcare System.	2	2				
Lecture №5. Fundamentals of Healthcare System Management.	2	2				
<b>Total for the module</b>	64	10	30			24
<b>Total for semester</b>	64	10	30			24
<b>Total for the year</b>	150	30	70			50

### 6.3. Topics of practical classes

№	Topic title	Number hours	
		Full-time study	Extramural form of study
1	Topic 1. Design and Organization of Statistical Studies.	2	-
2	Topic 2. Methods of Collecting Statistical Data. Types of Primary Data. Statistical Populations.	2	
3	Topic 3. Relative Values. Graphical Methods of Analysis.	2	-
4	Topic 4. Measures of Central Tendency. Variational Series and Types of Distribution.	2	-
5	Topic 5. Evaluation of the Validity of Statistical Hypotheses.	2	-
6	Topic 6. Time Series and Their Analysis.	2	-
7	Topic 7. Standardization Method.	2	-
8	Topic 8. Analysis of Relationships Between Parameters of Statistical Populations.	2	-
9	Topic 9. Epidemiological Methods for Studying Diseases.	2	-
10	Topic 10. Evidence-Based Medicine.	2	-
11	Topic 11. Final modular control 1.	2	-

12	Topic 1. Comprehensive Health Assessment of the Population. Methods for Studying and Evaluating Factors Affecting Population Health.	2	-
13	Topic 2. Epidemiological Surveillance and Health and Well-being Assessment.	2	-
14	Topic 3. Methods for Studying and Evaluating Basic Demographic Indicators of Natural Population Movement. Analysis of Demographic Situation.	2	-
15	Topic 4. Methods for Studying and Evaluating Infant Mortality Indicators.	2	-
16	Topic 5. Methods for Studying and Evaluating General Morbidity Indicators.	2	-
17	Topic 6. Methods for Studying and Evaluating Morbidity Indicators for the Most Important Socially Significant Diseases.	2	-
18	Topic 7. Stress and Conflict. Mechanisms for Protecting People from the Effects of Stress in Wartime.	2	-
19	Topic 8. Health Promotion. Types of Prevention, Methods, and Tools for Sanitary Education.	2	-
20	Topic 9. Final module control 2.	2	-
21	Topic 1. Models of Healthcare Systems.	2	-
22	Topic 2. Fundamentals of Health Insurance.		
23	Topic 3. Main Types of Medical Care Based on Their Features and Complexity of Provision. Role of the National Health Service (NHSU) in Organizing Different Types of Medical Care for the Population.	2	-
24	Topic 4. Organization of Primary Health Care for the Population.		
25	Topic 5. Organization of Emergency Medical Care for the Population. The State Emergency Medical Service and Its Role in the Healthcare System.	2	-
26	Topic 6. Organization of a Viable Network of Healthcare Facilities Providing Specialized Medical Care.	2	-
27	Topic 7. Organization of Obstetric and Gynecological Care and Pediatric Medical Care.	2	-
28	Topic 8. Types of Medical Examinations. Organization of Medical-Social Expertise for Temporary Loss of Working Capacity.	2	-
29	Topic 9. Organization of Medical-Social Expertise for Permanent Loss of Working Capacity.	2	-
30	Topic 10. Medical-Social Aspects of Disability. Significance and Analysis of Disability Indicators.	2	-
31	Topic 11. Analysis of Healthcare Facility Activities and Assessment of the Quality of Medical Care. Standardization in Healthcare.	2	-
32	Topic 12. Scientific Foundations of Management. Marketing in the Healthcare System.	2	-
33	Topic 13. Management and Leadership in Healthcare.	2	-
34	Topic 14. Entrepreneurial Activity in Healthcare. Finance in the Healthcare System.	2	-
35	Final module control 3.	2	-
	<b>Total for the semester</b>	<b>30</b>	-

## 6.4. Content of Independent Work in the Course

### Module I

#### **Topic 1. History of the Formation and Development of Biostatistics.**

The origin of the term “biostatistics.” Stages of the evolution of biostatistics as a science. Leading representatives and their contributions to the development of the science at each stage of the discipline’s development. Prominent Ukrainian biostatisticians and their contributions to the development of the science.

#### **Topic 2. Methodology for Conducting Sociological Research in Medical Practice.**

The practical significance of sociological research in the healthcare system. Requirements for the design of questions in questionnaires. Requirements for conducting surveys. Statistical methods for checking the correctness of questions formulated in independently developed questionnaires. The practical significance of the expert evaluation method and the algorithm for interpreting results.

#### **Topic 3. Visualization and Effective Presentation of Health Data, Dissemination, and Use of Results.**

Definition of key concepts and their characteristics. The significance of data visualization and its principles. Types and methods of data visualization. Rules for selecting presentation tools. Types of presentations. Principles of designing computer presentations and rules for their creation. Infographics: significance and development stages. Data dissemination: purpose and requirements for a dissemination plan. Use of visualization results.

#### **Topic 4. Non-parametric Criteria for Assessing the Likelihood of Statistical Hypotheses.**

Situations where non-parametric criteria are applied to assess statistical hypotheses. Specific features of applying individual non-parametric criteria for statistical hypothesis testing. Practical significance of using particular non-parametric criteria for statistical hypothesis testing.

#### **Topic 5. Organization of the Medical-Statistical Service and Its Role in Health Analysis.**

Principles for building and operating the medical-statistical service in Ukraine. Reporting documentation. Electronic document management. Health data databases.

### Module II

#### **Topic 1. Organization of the Sanitary-Epidemiological Service (SES) in Ukraine.**

Regulation of the right to a healthy environment in international, European, and national legislation. Key changes in the structure of the SES amid modern reforms in the healthcare system. Interaction between the SES and the healthcare system: content of key reporting documents and continuity in operations. Main functions, tasks, areas of work, and staffing in the SES of Zakarpattia region. Involvement of the healthcare system and SES in primary prevention. Types and methodology of mandatory medical examinations for designated population groups, their types, and specific features.

#### **Topic 2. Analysis of Population Structure by Age, Gender, and Place of Residence.**

The significance of population statistics for healthcare practice. Population censuses as a source of demographic information and the organization of such censuses. Population size and the concept of depopulation. Types of populations and their characteristics. Types of age structures of the population. Gender structure of the population: gender imbalance, its causes, and consequences. «Sex-age pyramid», its types. Regional characteristics of population structure by place of residence. «Urbanization», its manifestations and consequences in Ukraine. Population aging, its problems, and consequences for Ukraine. Factors influencing the sex-age composition of the population.

#### **Topic 3. Population Aging. Analysis of Life Expectancy Indicators (LE) and Demographic Burden.**

Key concepts related to aging. WHO's age classification. Life expectancy at birth, its calculation features. Age, gender, and regional differences in the average expected life expectancy (LE). Demographic burden and the significance of this indicator.

#### **Topic 4. Emergency Situations in Public Health (PH).**

Definition and essence of the concepts of «emergency situation» and «public health emergency» Types of emergency situations, their classification, and characteristics. The issue of international security in public health. Risks of disease outbreaks, epidemics, and natural disasters in public health as a threat to global security. Anthropogenic causes of security breaches in public health. Violent conflicts as a cause of significant human suffering and death. Modern strategies for counteracting emergency situations in public health. Preparation and response cycle, measures to combat the international spread of epidemics and other emergencies in public health. International Health Regulations. Bioterrorism as a global threat to humanity, the protection system.

#### **Topic 5. Regional Characteristics of Morbidity in Zakarpattia Region, Levels, and Prevalence of Socially Significant Diseases.**

Dynamics of changes in general morbidity and the morbidity of major socially significant diseases, and their regional characteristics. Main causes of the spread of certain diseases in Zakarpattia and ways to reduce them. Main preventive programs at the regional level. COVID-19 pandemic and its impact on morbidity levels in the region, its effect on the healthcare system and the organization of various types of medical care.

#### **Topic 6. Information and Awareness Activities (Advocacy) as a Component of Medical Prevention.**

The essence of information and awareness activities. Advocacy as a component of medical prevention and public health functions. Types of advocacies and their main elements. Stages of an advocacy campaign.

#### **Topic 7. Ecological Public Health.**

Essence of key concepts and their characteristics. Major groups of environmental factors. Current ecological health issues. Ecological disease burden. Directions and actions for health protection. Main mechanisms for health protection. Regulatory documents on health protection and involved structures.

#### **Topic 8. Methodological Foundations of Disease Burden Research.**

The essence of the concept of «disease» its causes. The essence of the concept of «disease burden» and its methodological foundations. The main components of the DALY indicator, YLL, and YLD. Major diseases contributing to the global and Ukrainian disease burden. Leading causes of disease burden globally and in Ukraine.

### **Module III**

#### **Topic 1. The World Health Organization (WHO) and Its Role in Solving Population Health Problems.**

Main tasks of the WHO. Organization and management of WHO activities. Organization of the WHO European Regional Office's work. Main WHO Programs and Ukraine's involvement in their implementation. Monitoring results of program implementation.

#### **Topic 2. Healthcare Services Market.**

Essence and preconditions for the formation of the healthcare services market. Structure, functions, and classification of the healthcare services market. Characteristics of the healthcare services market. Market conditions of healthcare services. Essence and types of competitive structures.

#### **Topic 3. Features of Providing Emergency and Inpatient Medical Care to Rural Populations.**

Factors determining the organization of medical care for rural populations. Problems of providing emergency medical care to rural populations. The state of outpatient, polyclinic, and inpatient medical care for rural populations amid current healthcare system reforms.

**Topic 4. Maternal Mortality and Ways to Reduce It. Family Planning and Sexual Education in Modern Conditions.**

Maternal mortality: definitions and essence. Main causes of maternal mortality and ways to reduce it. Types of maternal mortality. Essence of family planning and its role in the healthcare system. Content of family planning programs, features in Ukraine. The state and development of sexual education for children and youth. Key components of sexual education and their characteristics.

**Topic 5. Disability and Stigmatization Associated with Disability.**

Disability as a human rights issue. The concept of stigmatization and its characteristics in the context of disability. Problems in determining a person's incapacity. Youth and disability. The right to education. The right to participate in social, cultural, and political life.

**Topic 6. Pricing in the Healthcare System.**

Essence of price. Factors of price formation and price regulation mechanisms. Functions of price. Classification of prices in the healthcare system. Stages of the price formation process. Elements of medical service pricing. Features of pricing in Ukraine's healthcare system.

**Topic 7. Economic Analysis in Healthcare.**

Essence of economic analysis in healthcare. Effectiveness of healthcare facility activities. Methods for economic evaluation of alternative medical interventions. Financial analysis of economic activity in the healthcare system.

**Topic 8. Final module control / Independent Work.**

Preparation for the semester's Final module control and study of topics assigned for independent learning according to the algorithm for independent work.

**6.4. 1. Self-study**

№	Topic title	Number hours	
		Full-time study	Extramural form of study
<b>Module I</b>			
1	Topic 1. The History of the Formation and Development of Biostatistics	2	-
2	Topic 2. Methodology of Conducting Sociological Research in Medical Practice	2	-
3	Topic 3. Visualization and Effective Presentation of Health Data, Dissemination and Use of Results	2	-
4	Topic 4. Non-Parametric Criteria for Assessing the Probability of Statistical Hypotheses	2	-
5	Topic 5. Organization of the Medical-Statistical Service and Its Role in Health Analysis	2	-
<b>Module II</b>			
6	Topic 1. Organization of the Sanitary-Epidemiological Service in Ukraine	2	-
7	Topic 2. Analysis of Population Composition by Age, Gender, and Place of Residence	2	-
8	Topic 3. Population Aging. Analysis of Life Expectancy and Demographic Load Indicators	2	-
9	Topic 4. Emergency Situations in Public Health	2	-

10	Topic 5. Regional Features of Disease Incidence in the Zakarpattia Region, Level, and Spread of Socially Significant Diseases	2	-
11	Topic 6. Information and Advocacy Activities as Part of Medical Prevention.	2	-
12	Topic 7. Ecological Public Health	2	-
13	Topic 8. Methodological Foundations of Disease Burden Research	2	-
	<b>Total for the semester</b>	<b>26</b>	-
<b>Module III</b>			
13	Topic 1. The World Health Organization and Its Role in Addressing Population Health Issues	2	-
14	Topic 2. The Healthcare Services Market	2	-
15	Topic 3. Features of Providing Emergency and Inpatient Medical Care to Rural Populations	2	-
16	Topic 4. Maternal Mortality and Ways to Reduce It. Family Planning and Sexual Education in Modern Conditions	2	-
17	Topic 5. Disability and Stigmatization Related to Disability	2	-
18	Topic 6. Pricing in the Healthcare System	2	-
19	Topic 7. Economic Analysis in Healthcare	2	-
20	Topic 8. Final module control / Independent Work	10	-
	<b>Total for the semester</b>	<b>24</b>	-
	<b>Total for the year</b>	<b>50</b>	-

### 6.5. Individual tasks

The individual task involves working on topics assigned for independent study, filling out medical documentation forms, and preparing situational tasks in the form of projects according to the algorithm for self-study topics.

Methods of control: test-based knowledge assessment, oral questioning, written examination (semester control work as part of the program in the second semester of the course).

## 7. TOOLS, EQUIPMENT AND SOFTWARE THE USE OF WHICH IS PROVIDED FOR THE EDUCATIONAL SUBJECT

### Technical equipment:

- **Laptop:** Lenovo V15-ADA, Acer Aspire 3 (A315-51)
- **PC:** Philips, Intel Core i5+ monitor TFT LG 24M38A-B
- **Projector:** Digital Projektor Benq MS502; EPSON EB-X05
- **Printer:** laser BFP Canon i – SENSYS MF 231

## 8. RECOMMENDED SOURCES OF INFORMATION

### Basic sources

1. Biostatistics: textbook / [Hruzyeva T.S., Lekhan V.M., Ohnev V.A., et al.]; edited by Hruzyeva T.S. – Vinnytsia: Nova Knyha, 2020. – 384 p.
2. Public Health: study guide / [Hruzyeva T.S., Halienko L.I., Grechishkina N.V., et al.]; edited by Hruzyeva T.S. / Kyiv: Knyha-plyus, 2021. – 296 p.
3. Public Health: textbook for students of higher medical educational institutions. – 3rd edition – Vinnytsia: “Nova Knyha”, 2013. – 560 p.
4. Economic Analysis of Resource Utilization in Healthcare System / V.D. Parij, Yu.M. Safonov, N.M. Zakharova, et al. / Under the general editorship of Professor V.D. Parij. Educational guide. – Zhytomyr: “Polissya”, 2015. – 148 p.
5. Oxford Textbook of Global Public Health, 6th edition. Edited by Roges Detels, Martin Gulliford, Quarraisha Abdool Karim, and Chorh Chuan Tan. – Oxford University Press, 2017. – 1728 p.
6. Medical Statistics at a Glance Text and Workbook. Aviva Petria, Caroline Sabin. – Wiley-Blackwell, 2013. – 288 p.
7. V. Moskalenko, V. Taran, O. Hulchiy, Y. Glazunova et al. Health Economics: textbook. – Vinnytsia: Nova Knyha, 2010. – 112 p.

### Additional Literature

1. Board Review in Preventive Medicine and Public Health. Gregory Schwaid. – ELSEVIER, 2017. – 450 p.
2. Donaldson's Essential Public Health, Fourth Edition. Liam J. Donaldson, Paul Rutter – CRC Press, Taylor&Francis Group, 2017. – 374 p.
3. Jekel's Epidemiology, Biostatistics, Preventive Medicine and Public Health, Fourth Edition. David L. Katz, Joann G. Elmore, Dorothea M.G. Wild, Sean C. Lucan. – ELSEVIER, 2014. – 405 p.
4. Oxford Handbook of Public Health Practice, Fourth Edition. Charles Guest, Walter Ricciardi, Ichiro Kawachi, Iain Lang. – Oxford University Press, 2012. – 656 p.
5. Primer of Biostatistics, Seventh Edition. Stanton A. Glantz – McGraw-Hill Education, 2012. – 320 p.
6. Health Economics: textbook. – Vinnytsia: Nova Knyha, 2010. – 112 p.
7. Biostatistics. – Kyiv: Knyha Plyus, 2009. – 184 p.
8. Health Economics: textbook. – Vinnytsia: Nova Knyha, 2010. – 288 p.
9. Epidemiological Methods in Studying Non-Infectious Diseases / V.M. Lekhan, Yu.V. Voronenko, O.P. Maksymenko, et al. – Dnipro: ART-PRES, 2004. – 184 p.
10. Test Task Collection for State Examinations in Hygiene, Social Medicine, Healthcare Organization and Economics. Educational guide. – Vinnytsia: Nova Knyha, 2012. – 200 p.
11. Methods of Social Medicine / edited by O.M. Ochereyecko, O.H. Procek. – Vinnytsia: Tezys, 2007. – 410 p.
12. Population of Ukraine. Demographic Yearbook. – Kyiv: State Statistics Committee of Ukraine. (Access mode: [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua)).
13. Popchenko T.P. Reforming the Healthcare System in Ukraine: Organizational, Legal and Financial Support. – Kyiv: NISD, 2012. – 96 p.
14. Pohoriliak R.Yu., Feger O.V., Ladani S.A., Turok A.V. Methodical Recommendations on «Social Medicine, Public Health» (II Module) for Practical Classes for Foreign Students, Third Year of Study, Breza, 2021. – 57 p.
15. Pohoriliak R.Yu., Ladani S.A., Feger O.V., Turok A.V. Methodical Recommendations on «Social Medicine, Public Health» (III Module) for Practical Classes for Foreign Students, Fourth Year of Study, Breza, 2021. – 56 p.

16. Pohoriliak R.Yu., Shyp D.Ya., Goncharuk-Khomyn M.Y. Methodical Recommendations on «Biostatistics» for Practical Classes for Foreign Students, Fourth Year of Study, Uzhhorod: UzhNU, 2018. – 40 p.
17. Social Medicine and Healthcare Organization (for students of dental faculties at higher medical institutions in Ukraine, IV accreditation level). – Kyiv: Knyha Plyus, 2010. –328 p.
18. Annual Report on the Health of the Population, Sanitary-Epidemiological Situation, and the Results of the Healthcare System’s Activities in Ukraine, 2016 / Ministry of Health of Ukraine, State Institution “UICS of the Ministry of Health of Ukraine”.–Kyiv, 2017.–516 p.

#### **Information Resources on the Internet**

1. World Health Organization [www.who.int](http://www.who.int)
2. European Database «Health for All» [www.euro.who.int/ru/home](http://www.euro.who.int/ru/home)
3. Cochrane Center for Evidence-Based Medicine [www.cebm.net](http://www.cebm.net)
4. Cochrane Library [www.cochrane.org](http://www.cochrane.org)
5. National Library of Medicine – MEDLINE [www.ncbi.nlm.nih.gov/PubMed](http://www.ncbi.nlm.nih.gov/PubMed)
6. Canadian Centre for Health Evidence [www.cche.net](http://www.cche.net)
7. Centers for Disease Control and Prevention [www.cdc.gov](http://www.cdc.gov)
8. Public Health Center of the Ministry of Health of Ukraine [www.phc.org.ua](http://www.phc.org.ua)
9. Ukrainian Medical Statistical Information Database «Health for All»: <http://medstat.gov.ua/ukr/news.html?id=203>
10. British Medical Journal [www.bmj.com](http://www.bmj.com)
11. Evidence-Based Medicine Journal [www.evidence-basedmedicine.com](http://www.evidence-basedmedicine.com)

**Results of the further review of  
the syllabus**

The syllabus was re-approved on 20\_\_ / 20\_\_ academic year unchanged; with changes  
(Appendix\_\_).

(underline the correct variant)

Minutes № \_\_\_\_ of " \_\_\_\_ " \_\_\_\_\_ 20 \_\_\_\_ Head of the Department \_\_\_\_\_  
(Signature) (Surname, initials)

The syllabus was re-approved on 20\_\_ / 20\_\_ academic year unchanged; with changes  
(Appendix\_\_).

(underline the correct variant)

Minutes № \_\_\_\_ of " \_\_\_\_ " \_\_\_\_\_ 20 \_\_\_\_ Head of the Department \_\_\_\_\_  
(Signature) (Surname, initials)

The syllabus was re-approved on 20\_\_ / 20\_\_ academic year unchanged; with changes  
(Appendix\_\_).

(underline the correct variant)

Minutes № \_\_\_\_ of " \_\_\_\_ " \_\_\_\_\_ 20 \_\_\_\_ Head of the Department \_\_\_\_\_  
(Signature) (Surname, initials)

The syllabus was re-approved on 20\_\_ / 20\_\_ academic year unchanged; with changes  
(Appendix\_\_).

(underline the correct variant)

Minutes № \_\_\_\_ of " \_\_\_\_ " \_\_\_\_\_ 20 \_\_\_\_ Head of the Department \_\_\_\_\_  
(Signature) (Surname, initials)