

THE MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BLACK SEA NATIONAL UNIVERSITY in the name of PETER MOGIŁA

Medical Institute

Department of Hygiene, Social Medicine and Public Health

“APPROVED”



Course Description

Social medicine, public health

field of knowledge 22 «Health care»
in the specialty 222 «Medicine»

Developer

Zyuzin VO

Head of the Department of Developer

Zyuzin VO

Guarantor of the educational program

Klymenko MO

Director of the institute

Grishchenko GV

Head of EMD

Shkirchak SI

1. Description of the discipline

Name of the indicator	Characteristics of the discipline	
Name of discipline	Social medicine, public health	
Area of knowledge	22 "Health"	
Specialty	222 Medicine	
Specialization (if any)		
Educational program	Medicine	
Level of higher education	Master	
Status of the discipline	Normative	
Course of study	III, IV	
The academic year	2019-2020	
Semester number (s)	6th - 7th	
Total ECTS credits / hours	6 credits (3/3) / 180 hours (90/90)	
Course structure: - lectures - practical training - hours of independent work of students	Full-time form	Part-time form
	- 30 (20/10)	
	- 60 (30/30)	
	- 90 (40/50)	
Percentage of classroom load	50%	
The language of instruction	Ukrainian	
Form of intermediate control (if any)		
Form of final control	6th semester - credit 7th semester - exam	

2. Purpose, tasks and planned learning outcomes

The purpose of studying the discipline "Social Medicine, Public Health" is to acquire the necessary knowledge, skills and competencies for research, analysis and evaluation of public health, organization, resource provision for the health care system, development from the standpoint of evidence medicine recommendations to prevent and eliminate the harmful effects of factors on health and to improve the organization of medical care and the public health system.

Learning objectives: acquisition by students of competencies, knowledge, skills and abilities for the implementation of specialized activities in the specialty:

- mastering the theoretical foundations of biostatistics;
- mastering modern principles of evidence-based medicine;
- acquaintance with methods of definition and analysis of the basic biostatistical indicators and criteria;
- mastering the methodological and theoretical foundations of the formation of statistical aggregates for their further adequate analysis;
- mastering the methods of determining, analyzing and evaluating the main indicators of population health according to individual criteria and in relation to the factors that affect it;
- mastering the patterns 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 assessing the organization and quality of various types of medical care to the population in terms of health care reform;
- formation of knowledge on the issue of examination of disability, its types, the order of organization and actions of medical workers in relation to specific situations of examination of disability;
- mastering the principles of development of management decisions aimed at improving the activities of health care institutions:
- mastering the basics of economic analysis of the medical institution;
- mastering the principles of analysis and evaluation of financial and economic indicators of economic activity of medical institutions in order to rationally use available resources;
- formation of knowledge on pricing policy, strategic and tactical planning of economic development of the medical institution;
- acquaintance with the development of a business plan for business activities in the health care system.

Prerequisites for studying the discipline (interdisciplinary links). Social medicine, public health as a discipline:

a) is based on students' understanding of the basic principles of knowledge in normal physiology, hygiene, statistics, evidence-based medicine, ecology, clinical epidemiology, microbiology and integrates with these disciplines;

b) creates a theoretical basis for students to master the organization of clinical specialties (internal medicine, surgery, obstetrics and gynecology, pediatrics, anesthesiology, etc.), which involves both the integration of teaching with basic clinical disciplines and the acquisition of in-

depth knowledge of evidence-based medicine, organization and health economics, the ability to use this knowledge in the process of further training and in the professional activity of a doctor;

c) forms the methodological foundations of clinical thinking;

d) provides an opportunity to conduct a socio-medical analysis of clinical situations for further diagnosis, treatment and prevention of diseases.

Expecting learning outcomes. As a result of studying the discipline, students have:

- ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.

- ability to apply knowledge in practical situations;

- knowledge and understanding of the subject area and understanding of the profession;

- the ability to self-regulate and lead a healthy lifestyle, the ability to adapt and act in a new situation;

- ability to choose communication strategy, ability to work in a team, interpersonal skills;

- skills of using information and communication technologies;

- ability to abstract thinking, analysis and synthesis, ability to learn and be modernly trained;

- ability to evaluate and ensure the quality of work performed;

- determination and persistence in terms of tasks and responsibilities;

- ability to act socially responsibly and public consciousness.

- ability to assess the main indicators of public health;

- ability to assess the impact of socio-economic and biological determinants on health, their trends in terms of different population groups, risk identification;

- the ability to identify health inequalities caused by social determinants and to develop appropriate measures to reduce them;

- ability to apply the basic concepts and concepts of evidence-based medicine and biostatistics in planning, conducting and interpreting research results;

- ability to organize the provision and integration of medical care to the population;

- ability to ensure control over the quality of health care services provided at the appropriate level;

- ability to plan and carry out disease prevention measures among the population, including in collaboration with public health professionals;

- ability to develop and implement systems for monitoring and evaluating the effectiveness of interventions in preventive and diagnostic or screening programs;

- ability to analyze the activities of the health care system, institutions, departments or health professionals;

- ability to conduct a performance examination;

- ability to process state, social and medical information;

- ability to provide advocacy, communication, and social mobilization in the field of public health using various channels and communication techniques;

- Ability to set health priorities, assess needs, develop and implement evidence-based strategies and propose evidence-based measures.

According to the requirements of the educational-professional program, students must

- know:

- assessment of the state of health of the population and the impact of determinants on it, risk assessment, as well as the development and implementation of preventive measures aimed at preserving, strengthening the health and social well-being of the population;

- assessment of the activities of the health care system, institutions, departments or health professionals; identification and elimination of negative factors influencing their work, as well as the development of measures to improve the organization and improve the activities of professionals and health care institutions;

- be able to:

- analyze and assess the 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 health of the population (individual, family, population) in a medical institution according to standard methods, assess the risk;

- identify public health priorities, conduct needs assessments, propose science-based measures and develop appropriate strategies;

- plan disease prevention measures among the population to prevent the spread of diseases.

The developed program corresponds to the educational-professional program (OPP) and is focused on the formation of competencies:

- general (LC) - LC1 EPP:

ZK1. Ability to abstract thinking, analysis and synthesis, the ability to learn and master modern knowledge.

- professional (FC) - FC1, 10, 14, 17-20 EPP:

FC1. Patient interviewing skills.

FC10. Ability to carry out medical and evacuation measures.

FC14. Ability to carry out sanitary and hygienic and preventive measures.

FC17. Ability to conduct a performance examination.

FC18. Ability to keep medical records.

FC19. Ability to conduct epidemiological and medical-statistical studies of public health; processing of state, social, economic and medical information.

FC20. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.

According to the educational-professional program, the expected **program learning outcomes (PLO)** include the skills of **PLO24, 26, 27, 34, 37-40, 42-44 EPP**:

PLO 24	<p>In a medical institution on the basis of anamnestic data, general examination and gynecological examination of a woman, using knowledge of a woman's reproductive organs, adhering to the relevant ethical and legal norms, by making an informed decision, using a standard procedure:</p> <ul style="list-style-type: none"> • evaluate the patient and medical eligibility criteria method of contraception; • determine the plan of examination of the patient before choosing a method contraception;
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	<ul style="list-style-type: none"> • provide family planning counseling; • select a modern method of contraception for different categories population.
PLO 26	<p>Implement a system of anti-epidemic and preventive measures in the health care institution, its unit on the basis of data on the state of health of certain contingents of the population and the impact on the environment, using existing methods, within the primary health care, of:</p> <ul style="list-style-type: none"> • organization of nutrition, water supply; • mode of activity and rest; • formation of a favorable production environment; • primary prevention of diseases and injuries; • vaccine prophylaxis; • prevention of bad habits; • prevention of unwanted pregnancies; • promotion of a healthy lifestyle.
PLO 27	<p>Implement a system of primary prevention measures, based on data on the health status of the population served and the presence of the determinants of health, in the health care facility and outside it using existing methods, within the primary health care. sanitary assistance to the population:</p> <ul style="list-style-type: none"> • sanitary and educational measures to prevent the occurrence of infectious and non-infectious diseases, injuries and the promotion of a healthy lifestyle; • organization of rational nutrition, safe social and living conditions, water supply; <p>mode of activity and rest.</p>
PLO 34	<p>Under the conditions of a health care institution, its subdivision:</p> <ul style="list-style-type: none"> • prepare an annual report on personal production activities, using official accounting documents, according to the generalized form; • keep medical records of the patient and the population (outpatient / inpatient card, medical history, individual card of the pregnant woman, exchange card, history of childbirth, sanatorium-resort card, certificate of incapacity for work, documentation for MSEC, etc.), using standard technology, based on regulatory documents.
PLO 37	<p>In the conditions of a health care institution, its subdivision according to standard methods:</p> <ul style="list-style-type: none"> • identify negative environmental factors on the basis of data of the sanitary-preventive institution by comparison with existing norms and standards; • analyze the health status of a certain contingent on the basis of official ones data by comparison with average indicators; <p>determine the relationship between the state of the environment and</p>

	the state of health of a certain contingent on the basis of data about them; develop preventive measures based on data on the relationship between the state of the environment and the state of health of a particular contingent.
PLO 38	Carry out analysis of morbidity of the population, identifying risk groups, risk areas, time of risk, risk factors, in the conditions of the health care institution, its subdivision, using statistical and laboratory methods.
PLO 39	Assess the impact of socio-economic and biological determinants on the health of the individual, family, population, in the service area according to standard methods and on the basis of epidemiological and medical-statistical studies.
PLO 40	In the conditions of a health institution according to standard methods on the basis of official statistical data: <ul style="list-style-type: none"> • to investigate the volume and effectiveness of the doctor, unit, health care facility in the dynamics and in the comparison them with average static and the best in the field of activity; identify defects in activities and the reasons for their formation.
PLO 42	In the conditions of the institution, health care unit according to standard methods: <p>assess the cost of medical services;</p> <ul style="list-style-type: none"> • justify the choice of an adequate method of financing (payment), choice of rational forms of organization of medical services; • apply the methods of economic analysis when choosing methods diagnostics, prevention, treatment, rehabilitation (minimization costs, cost efficiency, cost-effectiveness).
PLO 43	In the conditions of a health care institution, adhering to the relevant ethical and legal norms, by making an informed decision to take measures: <ul style="list-style-type: none"> • organize the work of medical staff in a team, unit, institutions; to form rational medical routes of patients; • organize interaction with colleagues in your institution and in others health care facilities, subordinates and managers; • organize interaction with organizations and institutions outside health sector.
PLO 44	Apply tools to promote medical services on the market, based on the analysis of the needs of the population, in the conditions of functioning of the health care institution, its subdivision, in a competitive environment.

3. The program of the discipline

The educational process is organized according to the European Credit Transfer and Accumulation System (ECTS).

The curriculum is divided into 2 blocks:

Block 1. Biostatistics.

Block 2. Public health.

Block 1. Biostatistics

Topic 1. Social medicine and public health as a science. Biostatistics as a methodological basis for the analysis and assessment of public health and the health care system. Social medicine and public health is a science that studies the patterns of public health and its protection system. Methodology of population health analysis and assessment. Definitions of "biostatistics", "evidence-based medicine", "clinical epidemiology". The main stages of 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 is the quality of clinical trials. The concept of end results. Evidence-based medicine and the quality of medical care. Standardization of medical care: clinical protocols, standards and recommendations.

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

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

Topic 4. Compilation of statistical research programs. Statistical observation program. License plate layout. Grouping of statistical data, methods, values. Types of groupings, principles of construction of statistical groupings and classifications. Comparability of statistical groupings. The concept of multidimensional classifications. Data encryption and decryption. Program for the development and compilation of statistical material. Statistical tables, their characteristics, types, rules of construction of the table layout. Methodical bases of reading and analysis of tables.

Topic 5. Relative values. The 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, clarity), methods of their calculation and methodological bases of application for data analysis. The concept 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, bar, intra-bar, sector, radial, cartograms and card diagrams), the rules of their construction, the correctness of use. Modern methods of graphic image, 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 variation series. Average values: their types, calculation methods, features of use. The concept of variation, its meaning. Variability of population parameters, estimation methods. Absolute indicators of variation (amplitude, root mean square) and relative indicators of variation (coefficients of variation and determination), their estimation. Measures of variation, the concept

of distribution laws, their types, characteristics. Assessment of the normality of the distribution, "jumping" options. The rule of "three sigma", its practical use.

Topic 8. Standardization method. Problems of comparing statistical indicators in inhomogeneous aggregates. 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. Verification of the null hypothesis, evaluation of results. The practical significance of the standardization method.

Topic 9. Estimation of reliability of research results. Characteristics and analysis of statistical errors. Estimation of probability of the received results. The concept of internal and external validity. The level of significance of statistical criteria. Zero and alternative hypotheses. Hypothesis testing. Error of the 1st and 2nd kind. Typical errors at the stages of research. Random and systematic error. Average error of average and relative value, confidence interval. Estimation of the probability of difference: Student's t-test, calculation method, its estimation, typical errors of use. Paired and multiple comparisons. Newman-Cayles test, Tukey test. Fisher's exact criterion. Features of the use of nonparametric criteria: Mann-Whitney, Kruskala-Wallis.

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

Topic 11. Non-parametric methods of probability estimation. Substantiation of cases of using non-parametric evaluation methods, their significance. Types of compared sets, their characteristics. Analysis and evaluation of results in related populations, sign criterion, Wilcoxon criterion. Test the statistical hypothesis for independent samples. Analysis of qualitative features. Conjugacy tables. Chi-square criterion, its evaluation and practical application.

Topic 12. Correlation-regression analysis. Exploring the relationship between quantitative variables. The concept of functional and correlation. Strength and direction of communication. Types of correlation coefficients. Pearson's linear correlation coefficient, its estimation, characteristic. Nonparametric relationship estimation methods are Spearman's rank correlation coefficient. Paired and multiple correlation coefficients. Regression analysis, regression coefficient, regression equation. Using regression analysis for prediction.

Topic 13. Time series and their analysis. Basic rules of construction and analysis of time series in the study of the dynamics of medical and biological phenomena. Levels of a number. Types of time series: simple and complex, interval and instantaneous. The main indicators of the analysis of time series: absolute increase, growth / decrease rate, growth rate. The main techniques of processing the time series in order to determine the trend. Methods of alignment of time series: least squares; variable average, averaging on the left and right side; increase intervals. Forecasting based on extrapolation of time series.

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

Topic 15. Design of epidemiological studies: case-control, cohort, randomized clinical trials. Design of epidemiological and clinical studies. Research ethics. Types of design. Types of

control. Blindness study. The required sample size. Selection of object and units of research. Inclusion and exclusion criteria. The concept of randomization and stratification.

Topic 16. Screening tests: characteristics and basic requirements. The concept of risk factors. Screening. Evaluation of screening results. Requirements for screening tests. Sensitivity and specificity of the screening test. The relationship between sensitivity and specificity. The concept of ROC analysis. Prognostic and risk factors, their significance and possibilities of use. Determination of risk indicators in the case-control study. Absolute, relative and additional population risk: calculation and assessment methods. The concept of chances in epidemiology. Determining the odds ratio in a cohort study: calculation and evaluation methods.

Topic 17. Risk factors. Methods of calculating risk indicators and their assessment. Risk factors. Risk indicators: absolute, relative and additional population risk. Odds. Odds ratio. Methods of calculation and evaluation.

Topic 18. Screening. Methods for assessing the sensitivity and specificity of screening tests. Screening. Requirements for screening tests. Sensitivity and specificity of the screening test: calculation and evaluation methods.

Topic 19. Review of modern methods of statistical analysis (variance, multifactor, cluster). The concept of one-way analysis of variance (ANOVA) and multifactor analysis (MANOVA). Analysis of patient survival (Kaplan-Meyer method). The concept of cluster analysis.

Topic 20. Information support of epidemiological and clinical research. Systematic reviews and meta-analysis. Medical information: its components, problems of information retrieval. Literature databases, medical libraries. Generalization of results of clinical researches. Analytical reviews. The concept of metadata. Systematic reviews and meta-analysis. Cochrane cooperation: history of creation and activity.

Topic 21. Medical statistics, the role in the analysis of public health and 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 for Medical Statistics. Information flows in the system of medical statistics. Accounting and reporting documentation. Activities of information and analytical departments of health care institutions. The concept of electronic document management in health care.

Topic 22. Databases on public health. Organizing and conducting statistical surveys in public health. Databases on public health (European and domestic databases "Health for All"): design, content, opportunities. Research in public health in Ukraine and abroad.

Topic 23. The use of knowledge of biostatistics in the daily practice of the doctor. Software of statistical researches and the order of presentation of scientific works. The place and role of biostatistics in medical education and the work of a practitioner. Overview of the main packages of statistical data processing (Excel, Access, Statistics, Stata, SPSS, SAS): advantages, disadvantages, access, mastering problems. Types of scientific works (thesis, article, methodical recommendations, monograph, textbook, dissertation). The order of presentation of scientific works: design, publication, speech, presentation.

Topic 24. Basics of preparation of a scientific publication. The structure of scientific work (purpose, scope and methods, results of own research, conclusions). Features of registration of scientific works (representation of data in tables, graphic images). Rules for making references to sources of information, references.

Topic 25. Final control.

Block 2. Public health

Topic 26. Public health, functions and services. Public health as a science and a subject of teaching. Basic terms and definitions, history of creating a 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 27. Surveillance and assessment of health and well-being of the population. Disease surveillance system. Monitoring the incidence and prevalence of diseases. Registers of infectious and non-infectious diseases. Monitoring of diseases and indicators of maternal and child health, mental health, social health. Registers of ecologically caused diseases, occupational diseases. Injury surveillance. Diagnosing the health of local communities, identifying gaps, health inequalities, needs for action planning.

Topic 28. Population health: main determinants. Targeted approaches to the definition of "health": general philosophical, individual theoretical, individual practical, population. Population health as a conditional statistical concept. Methods of studying health. Population health indicators: demographic (fertility, mortality, life expectancy); physical development; morbidity; disability. Leading groups of factors influencing the health of the population: the level and way of life of people, the state of the environment, biological factors, availability and quality of medical care. Features of health of different sex, age and professional groups of the population. Public health strategies for maintaining good health.

Topic 29. 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 influencing fertility. Current trends and regional features of birth rate in Ukraine and the world. Total mortality, its leading causes in different regions, individual countries and in Ukraine, gender, age and territorial features. Infant mortality (infant mortality). The value of the indicator for assessing the health of the population, the level of socio-economic well-being and development of society. Leading causes of infant mortality. Average life expectancy, definition. Methods for determining the indicator, its dynamics in different regions of the world, individual countries and in Ukraine.

Topic 30. Methods of studying and assessing the main demographic indicators of natural population movement. Analysis of the demographic situation. Documents used to study the natural movement of the population. The order of birth registration in Ukraine. The essence of the concepts of "live birth", "stillbirth", "fetal death". Methods for determining and estimating general and special fertility rates. Total mortality. Procedure for registration of deaths in Ukraine. Methods of studying mortality, determination of general and special indicators, their significance and evaluation. The structure of causes of death. Natural population growth. Population changes. Mechanical and natural movement of the population. Depopulation. Analysis of regional features and dynamics of demographic indicators. Assessment of the demographic situation.

Topic 31. Analysis of the population by age, sex, place of residence. The importance of studying the age structure of the population. Type of age structure of the population (progressive, regressive, stationary) and its changes. "Age Pyramid". Gender disparity: causes and consequences. Urbanization of the population as a socio-economic problem.

Topic 32. Aging population. Analysis of indicators of coolant and demographic load. Problems related to the aging population. The average life expectancy of the population,

including men and women in Ukraine and the world, its dynamics. Demographic load indicator. Labor potential of the country.

Topic 33. Life as a value. Attitude to death and dying as a moral problem. Formation of attitude to life as a human value. Psychological and spiritual support in the pursuit of life, the definition of death as a natural process in old age or illness. Ensuring a dignified end to earthly life. Moral and ethical aspects of the attitude to natural death and euthanasia.

Topic 34. Methods of studying and assessing infant mortality rates. Procedure for registration of infant (infant) mortality. Methods for determining the indicators of general, neonatal, early neonatal, late neonatal, postneonatal infant mortality. Estimation of the ratio of infant mortality and neonatal mortality. Perinatal mortality. Leading causes of infant mortality at different ages of the first year of life. The main groups of factors influencing the formation of infant mortality rates (biological, environmental, medical and organizational, lifestyle).

Topic 35. Methods of studying and assessing the factors that affect the health of the population. Classification of risk factors that affect health. Methodical approaches to the study of factors that determine the levels of health of the population and its individual contingents. Features of studying the influence of factors: socio-economic, socio-biological, ecological and climatic, medical and organizational. Application of biostatistics methods (derivatives and averages, standardization method, correlation-regression analysis, parametric and non-parametric assessment of the probability of research results, score, rating).

Topic 36. Morbidity of the population as a medical and social problem. The concept of morbidity, the purpose of its study, features 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 the disease, including with the incidence of socially significant and dangerous diseases. Methods of studying morbidity, the possibility of applying certain methods, their advantages and disadvantages. Factors influencing 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 public health, its medical and social significance.

Topic 37. Methods of study and evaluation of general morbidity.

Study of morbidity according to appeals for medical care. Methods for determining indicators of primary morbidity and prevalence of diseases, their assessment. Dynamics of indicators of general and primary morbidity, regional features.

Topic 38. Methods of studying and assessing the incidence of the most important socially significant diseases. Diseases of the circulatory system, oncological, neuropsychiatric diseases, diabetes, tuberculosis, HIV / AIDS, trauma, alcoholism, drug addiction and substance abuse as medical and social problems. Leading factors influencing the prevalence of diseases. Dynamics of key indicators. Injury as a medical and social problem, types of injuries, case accounting, dynamics of indicators, age and gender in the regions of the world and in Ukraine.

Topic 39. Methods of study and assessment of morbidity with temporary disability. Leaflet as a source of information for the study of morbidity with temporary disability. Indicators: number of cases and days of disability per 100 employees, average case duration. In-depth study of the morbidity of workers depending on length of service, profession, working conditions.

Topic 40. Methodological foundations of the study of the burden of disease. Significance of results for the public health system. Determination of the list of diseases, organization of constant monitoring. A set of indicators (DALE, NALE) that characterize the global burden of disease: methods of calculation and evaluation. Significance of disease burden research results for the public health system. Improving the health of the least vulnerable. Measures to reduce morbidity and mortality from the most common diseases in Ukraine and Europe.

Topic 41. Medical and social aspects of disability. Methods of calculation and analysis of disability indicators. Disability as an indicator of public health. Disorders of the body that lead to disability. Disability groups. Causes of disability, classes of diseases that determine the main causes of disability. Indicators of disability: general disability (contingents of disabled people), primary disability (disability). The structure of the causes of general and primary disability. Injuries as a cause of disability of children and adults. Disability among children and adults. Regional features and dynamics of disability indicators.

Topic 42. Comprehensive assessment of public health. Population health indicators. The main sources of information in the study of public health. Health criteria and groups. Comprehensive assessment of individual health. Assessment of quality of life. Comprehensive assessment of public health. Integral indicators of complex assessment of population health: coefficient of population sustainability; human development index. WHO Summary Measures of Population Health: DALE (disability-adjusted life expectancy); health-adjusted life expectancy (NALE).

Topic 43. Analysis of indicators of physical development. Characteristics of physical development as an indicator of public health. Definition of "physical development", its genetic and social conditionality. Biological development and morphofunctional development. Methods of assessing physical development. Regional features and dynamics of physical development indicators.

Topic 44. Providing strategic leadership for health and well-being. Strategic leadership: definitions, key provisions. Types of strategic leadership for 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.

Topic 45. Methodology of analysis of the causes of social inequality in relation to health and its protection. Obstacles to providing the necessary conditions to maintain individual health. Social inequality as a cause of unsatisfactory access to health care and social support. Analysis of the causes of social inequality in health and health care. Ways to improve the health of all segments of the population.

Topic 46. Environmental public health. Ensuring the protection of public health, including safety of the environment, labor, food, etc. Environmental public health. Components of the living environment of people: natural environment (environment), social environment (society) and man-made environment (domestic and industrial). The main sources of threats to the health of the individual or community. Protecting the human environment. Creating a "comfort zone" for a full life. The importance of intersectoral cooperation and international cooperation for the protection of the human environment.

Topic 47. Public health emergencies. Bioterrorism.

Global threats to international health in the 21st century. Public health emergencies: consequences of climate change, epidemics, massive chemical damage, radiation disasters. International public health security. The role of WHO in the organization of notification and

rapid response in emergencies. The concept of international health, current issues of international health on the example of the European region. Bioterrorism is a global threat to international health. Biological weapons. Public health system strategy to reduce the risks of biological weapons use and adverse effects.

Topic 48. Stress and conflict. Mechanisms to protect people from stress. Stress and conflict as a cause of non-communicable diseases. Psychohygiene as a basis for prevention.

Topic 49. Moral, ethical and legal aspects of health interventions. Development of reproductive medicine. Artificial insemination, surrogacy, gamete donation: moral and ethical aspects. The role of reproductive medicine in solving the problem of low birth rate. Moral, ethical and legal aspects of transplantation.

Topic 50. 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 health care prevention programs. Targeted prevention programs to combat the most socially significant diseases: coronary heart disease, hypertension, diabetes, tuberculosis, malignant neoplasms. The role of intersectoral cooperation in improving the efficiency and effectiveness of preventive measures.

Topic 51. Screening programs for early detection of diseases and risk factors.

Screening as a preventive technology. Early detection screening programs diseases and risk factors, their use.

Topic 52. Information and explanatory activity (advocacy) as an integral part of medical prevention. Informing society, decision-makers, politicians about existing and potential health threats, health problems, needs for preventive measures. The art and technique of informing, influencing and motivating people, institutions, audiences on important issues of health determinants. Tasks and content of the work of public health centers, their structural units, interaction with other health care institutions. Development of preventive strategies to protect and promote health, reduce the negative impact of determinants on public health. Prevention programs and strategies for disease prevention.

Topic 53. Health promotion. Types, forms and methods. Methods and means of medical and hygienic training and education of the population, their features in different health care facilities. Definitions of "health promotion", "healthy lifestyle", "prevention". Types of prevention. The importance of forming a healthy lifestyle to maintain and enhance the health of the population. Leading lifestyle factors that affect the health of the population. Directions for forming a healthy lifestyle. Development of questionnaires to study the factors that affect the health of the population. Drawing up a lecture plan.

Topic 54. Communication and social mobilization in the interests of health. Press releases and media relations. The importance of communication in maintaining and promoting health. Forms of communication. Communication channels. The importance of public relations and the media. Problems and possible errors. A public health press release is an important form of communicating medical information to the general public: rules of compilation and use.

Topic 55. Informatization of public health. Medical information systems in the world and in Ukraine. Information technology in the global health system. Medical information systems: storage of information, fast access to information, exchange of information, statistical analysis of aggregated data, reduction of staff working time and reduction of errors. Terminological standards and rubricators. Comprehensive automation of medical institutions. Electronic document management. Electronic patient card.

Topic 56. Visualization and effective presentation of health data. Dissemination and use of results. Effective presentation of health data. Traditional forms, data representation in the form of diagrams and tables. Data visualization with the help of modern technologies: infographics, animation, interaction. Forms of presentation: posters, leaflets, booklets, presentations, films.

Topic 57. Final control.

The structure of the discipline

№ 3/II	topic name	Number of hours			
		Total	including:		
			lectures	practical training	independent work
Block 1. Biostatistics					
1	Social medicine and public health as a science. Biostatistics as a methodological basis for the analysis and assessment of public health and the health care system.	2	2	–	–
2	Methodical bases of the organization of statistical researches. Data types. Methods of collecting statistical material.	2	2	–	–
3	Organization and planning of statistical surveys.	4	–	2	2
4	Compilation of statistical research programs.	4	–	2	2
5	Relative values.	4	–	2	2
6	Graphic methods of analysis.	4	–	2	2
7	Average values and indicators of variation.	4	–	2	2
8	Standardization method.	4	–	2	2
9	Estimation of reliability of research results. Characteristics and analysis of statistical errors.	2	2	–	–
10	Parametric methods of probability estimation.	4	–	2	2
11	Nonparametric methods of probability estimation.	4	–	2	2
12	Correlation-regression analysis.	4	–	2	2
13	Time series and their analysis.	4	–	2	2
14	Epidemiological studies in health care, their classification. Empirical and experimental studies.	2	2	–	–
15	Design of epidemiological studies: case-control, cohort, randomized clinical trials.	4	–	2	2
16	Screening tests: characteristics and basic requirements. The concept	2	2	–	–

	of risk factors.				
17	Risk factors. Methods of calculating risk indicators and their assessment.	4	–	2	2
18	Screening. Methods for assessing the sensitivity and specificity of screening tests.	4	–	2	2
19	Review of modern methods of statistical analysis (variance, multifactor, cluster).	2	2	–	–
20	Information support of epidemiological and clinical research. Systematic reviews and meta-analysis.	2	2	–	–
21	Medical statistics, role in the analysis of public health and the health care system. Electronic document management.	2	2	–	–
22	Public health databases. Organizing and conducting statistical surveys in public health.	2	2	–	–
23	The use of knowledge of biostatistics in the daily practice of the doctor. Software of statistical researches and the order of presentation of scientific works.	2	2	–	–
24	Basics of preparation of a scientific publication.	4	–	2	2
25	Final control	6	–	2	6
	Execution of IWS	6	–	–	6
	Total hours	90	20	30	40
Block 2. Public health					
26	Public health, features and services.	2	2	–	–
27	Surveillance and assessment of the health and well-being of the population.	4	–	2	2
28	Population health: key determinants.	2	2	–	–
29	Medical and social problems of demographic processes.	2	2	–	–
30	Methods of studying and assessing the main demographic indicators of natural population movement. Analysis of the demographic situation.	4	–	2	2
31	Analysis of the population by age, sex, place of residence.	1	–	–	1
32	Population aging. Analysis of indicators of coolant and demographic load.	1	–	–	1
33	Life as a value. Attitude to death and dying as a moral problem.	1	–	–	1
34	Methods of studying and assessing infant mortality rates.	4	–	2	2
35	Methods of studying and assessing the factors that affect the health	4	–	2	2

	of the population.				
36	Morbidity of the population as a medical and social problem.	2	2	–	–
37	Methods of study and evaluation of overall morbidity.	4	–	2	2
38	Methods of studying and assessing the incidence of the most important socially significant diseases.	4	–	2	2
39	Methods of studying and assessing the incidence of temporary disability.	1	–	–	1
40	Methodological bases of research of burden of diseases. Significance of results for the public health system.	4	–	2	2
41	Medical and social aspects of disability. Methods of calculation and analysis of disability indicators.	4	–	2	2
42	Comprehensive assessment of public health.	4	–	2	2
43	Analysis of indicators of physical development.	1	–	–	1
44	Providing strategic leadership for health and well-being.	1	–	–	1
45	Methodology for analyzing the causes of social inequality in health and health care.	4	–	2	2
46	Environmental public health. Ensuring the protection of public health, including safety of the environment, labor, food, etc.	1	–	–	1
47	Public health emergencies. Bioterrorism.	1	–	–	1
48	Stress and conflict. Mechanisms to protect people from stress.	1	–	–	1
49	Moral, ethical and legal aspects of health interventions.	1	–	–	1
50	Prevention and cross-sectoral cooperation in the public health system.	2	2	–	–
51	Screening programs for early detection of diseases and risk factors.	1	–	–	1
52	Awareness-raising activities (advocacy) as an integral part of medical prevention.	4	–	2	2
53	Health promotion. Types, forms and methods.	4	–	2	2
54	Communication and social mobilization for health. Press releases and media relations.	4	–	2	2
55	Public health informatization. Medical information systems in the world and in Ukraine.	1	–	–	1
56	Visualization and effective presentation of health data. Dissemination and use of results.	1	–	–	1
57	Final control	9	–	4	5
	Execution of ISW	6	–	–	6
	Total hours	90	10	30	50

	ECTS loans - 3.0				
	Total hours for discipline	180	30	60	90
	ECTS credits for the discipline - 6.0				

4. The content of the discipline

4.1. Lecture

№ з/п	Lesson topic / plan	Number of hours
Block 1. Biostatistics		
1	<p>Social medicine and public health as a science. Biostatistics as a methodological basis for the analysis and assessment of public health and the health care system.</p> <p>1) Social medicine and public health - a science that studies the patterns of public health and its protection system. Methodology of population health analysis and assessment. Definitions of "biostatistics", "evidence-based medicine", "clinical epidemiology".</p> <p>2) The main stages of 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 is the quality of clinical trials. The concept of end results.</p> <p>3) Evidence-based medicine and the quality of medical care. Standardization of medical care: clinical protocols, standards and recommendations.</p>	2
2	<p>Methodical bases of the organization of statistical researches. Data types. Methods of collecting statistical material.</p> <p>1) Methodological bases, forms and methods of statistical observation and data collection. Accuracy of observations. Data types: qualitative and quantitative data.</p> <p>2) The use of different measurement scales: absolute, ordinal, interval, relations.</p> <p>3) Methods of collecting statistical material: direct registration, copying, surveys. Types of questionnaires, their characteristics. Marketing and sociological surveys, types of questions in the survey, problems with the organization of surveys in health care.</p>	2
3	<p>Estimation of reliability of research results. Characteristics and analysis of statistical errors.</p> <p>1) Assessment of the probability of the obtained results. The concept of internal and external validity. The level of significance of statistical criteria.</p> <p>2) Zero and alternative hypotheses. Hypothesis testing. Error of the 1st and 2nd kind. Typical errors at the stages of research. Random and systematic error. Average error of average and relative value, confidence interval. Estimation of the probability of difference: Student's t-test, calculation method, its estimation, typical errors of use. Paired and multiple comparisons. Newman-Cayles test, Tukey test. Fisher's exact criterion. Features of the use of nonparametric criteria:</p>	2

	Mann-Whitney, Kruskala-Wallis.	
4	<p>Epidemiological studies in health care, their classification. Empirical and experimental studies.</p> <p>1) The modern concept of epidemiology. Classification of epidemiological studies.</p> <p>2) Comparative characteristics of different types of research, assessment of the degree of evidence of their results. Retrospective and prospective studies. Empirical research (descriptive and analytical).</p> <p>3) Descriptive epidemiology: a description of a single case and a series of cases. Analytical epidemiological studies. Cohort studies and case-control studies.</p>	2
5	<p>Screening tests: characteristics and basic requirements. The concept of risk factors.</p> <p>1) Screening. Evaluation of screening results. Requirements for screening tests. Sensitivity and specificity of the screening test.</p> <p>2) The relationship between sensitivity and specificity. The concept of ROC analysis. Prognostic and risk factors, their significance and possibilities of use.</p> <p>3) Determination of risk indicators in the study "case-control". Absolute, relative and additional population risk: calculation and assessment methods. The concept of chances in epidemiology. Determining the odds ratio in a cohort study: calculation and evaluation methods.</p>	2
6	<p>Review of modern methods of statistical analysis (variance, multifactor, cluster).</p> <p>1) The concept of one-way analysis of variance (ANOVA) and multifactor analysis (MANOVA).</p> <p>2) Analysis of patient survival (Kaplan-Meyer method). The concept of cluster analysis.</p>	2
7	<p>Information support of epidemiological and clinical research. Systematic reviews and meta-analysis.</p> <p>1) Medical information: its components, problems of information retrieval. Literature databases, medical libraries.</p> <p>2) Generalization of the results of clinical trials. Analytical reviews.</p> <p>3) The concept of metadata. Systematic reviews and meta-analysis. Cochrane cooperation: history of creation and activity.</p>	2
8	<p>Medical statistics, role in the analysis of public health and the health care system. Electronic document management.</p> <p>1) Medical statistics: theoretical foundations, subject and content, tasks, sections.</p> <p>2) Principles of construction and operation of the medical and statistical service of Ukraine. Center for Medical Statistics. Information flows in the system of medical statistics.</p> <p>3) Accounting and reporting documentation. Activities of information and analytical departments of health care institutions. The concept of electronic document management in health care.</p>	2
9	<p>Public health databases. Organizing and conducting statistical surveys in public health.</p>	2

	<p>1) Databases on public health (European and domestic databases "Health for All"): design, content, capabilities.</p> <p>2) Research activities in public health in Ukraine and abroad.</p>	
10	<p>The use of knowledge of biostatistics in the daily practice of the doctor. Software of statistical researches and the order of presentation of scientific works.</p> <p>1) The place and role of biostatistics in medical education and the work of a practitioner.</p> <p>2) Overview of the main packages of statistical data processing (Excel, Access, Statistics, Stata, SPSS, SAS): advantages, disadvantages, access, mastering problems.</p> <p>3) Types of scientific works (thesis, article, methodical recommendations, monograph, textbook, dissertation). The order of presentation of scientific works: design, publication, speech, presentation.</p>	2
Total hours		20
Block 2. Public health		
11	<p>Public health, features and services. Population health: key determinants.</p> <p>1) Public health as a science and a subject of teaching. Basic terms and definitions, history of creating a public health system.</p> <p>2) Basic operational functions of public health. Basic public health services.</p> <p>3) Modern development of the public health system in Ukraine and the world.</p> <p>4) Public health infrastructure.</p>	2
12	<p>Medical and social problems of demographic processes.</p> <p>1) 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 influencing fertility. Current trends and regional features of birth rate in Ukraine and the world.</p> <p>2) Total mortality, its leading causes in different regions, individual countries and in Ukraine, gender, age and territory. Infant mortality (infant mortality).</p> <p>3) The value of the indicator to assess the health of the population, the level of socio-economic well-being and development of society. Leading causes of infant mortality. Average life expectancy, definition. Methods for determining the indicator, its dynamics in different regions of the world, individual countries and in Ukraine.</p>	2
13	<p>Morbidity of the population as a medical and social problem.</p> <p>1) The concept of morbidity, the purpose of its study, features 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 the disease, including with the incidence of socially significant and dangerous diseases.</p>	2

	<p>2) Methods of studying morbidity, the possibility of using certain methods, their advantages and disadvantages. Factors influencing the completeness of data on morbidity depending on the methods of its study.</p> <p>3) International statistical classification of diseases, injuries and causes of death, the 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 public health, its medical and social significance.</p>	
14	<p>Medico-social problems of morbidity with temporary and permanent disability.</p> <p>1) Leaflet as a source of information for the study of morbidity with temporary disability.</p> <p>2) Indicators: the number of cases and days of disability per 100 employees, the average duration of the case. In-depth study of the morbidity of workers depending on length of service, profession, working conditions.</p>	2
15	<p>Prevention and cross-sectoral cooperation in the public health system.</p> <p>1) 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.</p> <p>2) International programs to ensure the preventive activities of the health care system. Targeted prevention programs to combat the most socially significant diseases: coronary heart disease, hypertension, diabetes, tuberculosis, malignant neoplasms. The role of intersectoral cooperation in improving the efficiency and effectiveness of preventive measures.</p>	2
Total hours		10
Total hours for discipline		30

Tasks for independent work

№ з/п	Name topics	Number of hours
Block 1. Biostatistics *		
	Preparation for practical classes - theoretical preparation for the development of practical skills.	28
	Execution of VTS on the selected topic.	6
	Preparation for the final control.	6
Total hours		40
Block 2. Public health		
1	Analysis of the population by age, sex, place of residence	1
2	Population aging. Analysis of indicators of coolant and demographic load.	1
3	Life as a value. Attitude to death and dying as a moral problem.	1
4	Methods of studying and assessing the incidence of temporary disability.	1
5	Analysis of indicators of physical development.	1

6	Providing strategic leadership for health and well-being.	1
7	Environmental public health. Ensuring the protection of public health, including safety of the environment, labor, food, etc.	1
8	Public health emergencies. Bioterrorism.	1
9	Stress and conflict. Mechanisms to protect people from stress.	1
10	Moral, ethical and legal aspects of health interventions.	1
11	Screening programs for early detection of diseases and risk factors.	1
12	Public health informatization. Medical information systems in the world and in Ukraine.	1
13	Visualization and effective presentation of health data. Dissemination and use of results.	1
	Preparation for practical classes - theoretical training and development of practical skills.	26
	Execution of VTS on the selected topic.	6
	Preparation for the final control.	5
Total hours		50
Total hours for discipline		90

***Note. According to this program in Block 1. "Biostatistics" students do not assume independent mastery of certain topics.**

Tasks for independent work

Block 1. Biostatistics

One topic is proposed for the implementation of VTS: "Implementation of evidence-based medicine in clinical practice (on the example of a separate clinical discipline)" or offers a small research work in any field of medicine (anatomy, therapy, hygiene, pharmacology, etc.) and presentation of its results in the form of VTS.

Block 2. Public health

Individual tasks for VTS *

1. Maternal mortality as an important indicator of public health: the main causes and trends in Ukraine.
2. Modern characteristics of infectious morbidity of the population of Ukraine: main trends and problems. HIV and AIDS in Ukraine: current situation, ways to overcome problems.
3. Public health emergencies. Bioterrorism.
4. Analysis of the dynamics of tuberculosis in Ukraine: the main trends and problems.
5. Modern characteristics of the incidence of diseases of the circulatory system in Ukraine: causes and consequences of current trends.
6. Modern characteristics of the incidence of malignant neoplasms in Ukraine: causes and consequences of current trends.
7. Tobacco, alcohol and drug use - a social and medical problem of society: the situation in Ukraine and ways to solve it.
8. Analysis of the dynamics of the incidence of diabetes in Ukraine: the main trends and problems.
9. Analysis of the dynamics of injury indicators in Ukraine and around the world. Features and types of trauma to children and adults.

10. The state of health of the population affected by the Chernobyl accident - current trends.

11. Prevention and intersectoral cooperation in the public health system.

12. Characteristics of human lifestyle and its components. Influence of lifestyle, behavioral risk factors on the health of the population of Ukraine.

13. Characteristics of the environment and its components. The impact of environmental factors on the health of the population of Ukraine. Environmental public health.

14. Health promotion. Awareness-raising activities (advocacy) as an integral part of medical prevention.

15. April 7 - World Health Day: the slogan of the current year, events held to celebrate World Health Day in the world and in Ukraine.

*Note. Execution of VTS involves the preparation of a presentation on this topic with a mandatory speech (defense of work) in a practical lesson.

4.4. Ensuring the educational process

1. Verbal methods: lecture, conversation, story, explanation, work with literature.

2. Visual methods: illustration, demonstration, observation.

3. Practical methods: situational tasks, independent work, research work.

4. Interactive methods: discussion, work in small groups, brainstorming, case method, business game.

5. Credit and examination tickets.

5. Final control

List of control questions of final control

Block 1. Biostatistics

1. Theory and concept of statistical observation, stages of its implementation.

2. Design of clinical and epidemiological studies.

3. Sources of statistical information.

4. Grouping of statistical data.

5. Statistical tables, their characteristics, types, rules of construction.

6. Selective observation as a source of statistical information.

7. Types of statistical observation of time and completeness of accounting.

8. Methods of collecting statistical material.

9. Absolute data. Types of relative values.

10. Graphic methods of data analysis. Types of diagrams, rules for their construction.

11. Average values in clinical and epidemiological studies, their types, values, calculation methods.

12. The concept of variation, its meaning. Variability of population parameters, estimation methods.

13. Estimation of reliability of research results. A parametric criterion for assessing a student's probability.

14. Justification "cases of using non-parametric methods of probability assessment. The concept of connected and independent sets.

15. Functional and correlation. Types of correlation coefficients.

16. Regression analysis, regression coefficient, regression equation.

17. Methods of standardization, stages of the direct method of standardization.

18. Basic rules of construction and analysis of time series. Methods of alignment of time series, the concept of extrapolation and interpolation.
19. The concept of risk in epidemiological studies. The main risk factors that affect health.
20. Risk indicators, odds ratio indicator, calculation and evaluation methods.
21. Basic principles and provisions of clinical epidemiology. Hierarchy of evidence of clinical trials.
22. The concept of the null hypothesis. Test the statistical hypothesis. Errors of the first and second kind.
23. Screening. The main characteristics of screening tests. Specificity and sensitivity of the screening test.
24. Empirical and experimental epidemiological studies. The "gold standard" of research.
25. Evidence-based medicine. History, main provisions, principles, areas of application.
26. Types of data. The concept of measurement scales.
27. The concept of systematic reviews and meta-analysis.
28. The subject and objectives of medical statistics. Organization of the service of medical statistics in Ukraine. Electronic document management.
29. Tasks of the information-analytical department of the health care institution. The concept of accounting and reporting documentation.
30. Basics of preparation of a scientific publication.

Block 2. Public health

1. Public health, functions and services.
2. Targeted approaches to the definition of "health". Population health indicators. The burden of disease.
3. Leading groups of factors influencing the health of the population, their classification. Surveillance and assessment of the health and well-being of the population.
4. The subject and content of demography, the importance of demographic data for health care practice. Sources of information, key indicators,
5. Birth rate, indicators in Ukraine. Factors influencing the birth rate.
6. Mortality. Methods of calculating general and special indicators. Features and causes of mortality in different population groups. Infant mortality. Leading reasons, factors influencing its formation. Medical and social aspects of reducing infant mortality.
7. Average life expectancy (LLL), the relationship with the Human Development Index (HDI). Trends in the dynamics of coolant in different regions of the world, individual countries and in Ukraine. Taking into account the impact of the "burden of disease" on the coolant.
8. Morbidity, its medical and social significance. Study methods, their advantages and possibilities. International statistical classification of diseases, injuries and causes of death, principles of its construction and significance.
9. General morbidity, sources of study. Indicators of general morbidity, features among rural and urban population.
10. Occupational morbidity: the feasibility of special accounting, key indicators.
11. Incidence of the most important socially significant diseases: list of nosological forms, main indicators.
12. Hospitalized morbidity: concepts, main indicators.
13. Morbidity with temporary disability, key indicators.

14. The concept of types of pathology of the population. Their characteristics. Leading non-communicable diseases: diseases of the circulatory system, malignant neoplasms, diabetes, chronic manifestations of lung disease, their medical and social significance.

15. Leading risk factors for non-communicable diseases: tobacco use, alcohol, low physical activity, malnutrition, metabolic risk factors.

16. Tuberculosis as a medical and social problem.

17. HIV / AIDS as a medical and social problem.

18. Injury - medical and social significance.

19. Physical development. Criteria for studying biological and morpho-functional development. Current trends in physical development.

20. Disability: the main causes of disability, disability groups, the factors that affect it. Definition and assessment of disability indicators.

21. International health. Bioterrorism.

22. Inequality in public health and protection. Detection and reduction.

23. Environmental public health. Ensuring the protection of public health, including safe environment, labor, food.

24. Prevention and intersectoral cooperation in the public health system. Types of prevention. Preventive programs in health care, Screening.

25. Health promotion. Awareness-raising activities (advocacy) as part of medical prevention.

26. Communication and social mobilization in the interests of health.

27. Characteristics and content of the work of public health centers, their structural units, prevention and formation of a healthy lifestyle, interaction with other health care institutions.

28. Moral and ethical aspects of health interventions.

29. Informatization of public health. Medical information systems.

30. Provide strategic guidance for health and well-being.

"0" version of the exam ticket

Petro Mogyla Black Sea National University

Educational and qualification level - master

Field of knowledge: 22 "Health"

Specialty 222 "Medicine"

"Social medicine, public health"

Option № 0

1. Theory and concept of statistical observation, stages of its implementation. (Maximum number of points - 20).

2. Screening. The main characteristics of screening tests. Specificity and sensitivity of the screening test. (Maximum number of points - 20).

3. Public health, functions and services. (Maximum number of points - 20).

4. Birth rate, indicators in Ukraine. Factors influencing the birth rate. (Maximum number of points - 20).

Approved at the meeting of the Department of Hygiene, Social Medicine and Public Health.
Protocol № ____ dated _____ 2020

The head of the department is

professor Zyuzin VO

Examiner Professor

professor Zyuzin VO

6. Evaluation criteria and diagnostic tools for learning outcomes

Control methods

- Survey (testing of theoretical knowledge and practical skills).
- Test control.

- Writing a review of scientific literature (abstracts), performing individual tasks, their defense.

Current control is carried out at each practical lesson in accordance with the specific objectives of the topic of the lesson, as well as those topics that the student develops independently and they are not included in the structure of the practical lesson. It is recommended to use types of objective (standardized) control of theoretical and practical training of students.

Final control is carried out in the form of final control work (RCC) upon completion of the study of the block in the last, control, practical classes on the block. Students who have completed all types of work provided for in the working curriculum and scored at least 40 points while studying the unit are admitted to the RCC. The maximum number of points for current educational activities (PND) is 80.

The form of final control should be standardized and include control of theoretical and practical training.

During the PRC the student can get a maximum of 40 points. PKR is considered credited if the student received at least 30 points.

After the 6th semester, the final control is also conducted in the form of a test, after the 7th semester - in the form of an exam (for the 6th and 7th semesters).

The maximum number of points on the test and exam is 80 points. The test (exam) is considered passed if the student has scored at least 50 points. The distribution of points in the test and exam - see above in the examples of test and examination tickets.

Distribution of points received by students

The number of points assigned to students when mastering the block is 120-200 points, including 40-80 points for PND, 30-40 points for PKR, 50-80 points for tests and exams.

Accordingly, in blocks 1 and 2 the student can receive in a practical lesson (ie for one topic) from 2.5 to 5 points (Table).

Independent work is evaluated in block 1 from 5 to 10 points, in block 2 - from 7.5 to 15 points (see table).

Assessment of student performance

Type of activity (task)	Максимальна кількість балів	
	Block 1 (III cours, 6)	Block 1 (IV cours, 7)
Topic 1	5	5
Topic 2	5	5
Topic 3	5	5
Topic 4	5	5
Topic 5	5	5
Topic 6	5	5
Topic 7	5	5
Topic 8	5	5
Topic 9	5	5
Topic 10	5	5
Topic 11	5	5
Topic 12	5	5
Topic 13	5	5
Topic 14	5	-
IW	10	15
total	80	80
Final control work	40	40
TOTAL	120	120
EXAM	80	80
TOTAL	200	200

Criteria for assessing knowledge

A grade of 5 points per topic in the 6th and 7th semesters, 38-40 points on the PKR and 71-80 points on the test and exam (A on the ECTS scale and 5 on the national scale) evaluates the student's answer if it demonstrates deep knowledge all theoretical provisions and the ability to apply theoretical material for practical analysis and has no inaccuracies.

A score of 4 per topic in the 6th and 7th semesters, 35-37 points on the PKR and 61-70 points on the test and exam (B and C on the ECTS scale and 4 on the national scale) the answer is evaluated if it shows knowledge all theoretical provisions, the ability to apply them in practice, but some fundamental inaccuracies are allowed.

The student's answer is evaluated with a score of 2.5-3 points per topic in the 6th and 7th semesters, 30-34 points on the RCC and 50-60 points on the test and exam (D and E on the

ECTS scale and 3 on the national scale). provided that he knows the main theoretical principles and can use them in practice.

7. Recommended sources of information

7.1. Basic

1. Громадське здоров'я: підручник для студ. вищих мед. навч. закладів. – Вид. 3. – Вінниця: «Нова книга», 2013. – 560 с.
2. Економічний аналіз використання ресурсів в системі охорони здоров'я / В. Д. Парій, Ю. М. Сафонов, Н. М. Захарова та ін. / За загальною редакцією професора В. Д. Парія / Навч. посібн. – Житомир: «Полісся», 2015. – 48 с.
3. Oxford Textbook of Global Public Health, 6 edition. Edited by Rodes Detels. Martin Gulliford, Quarraisha Abdool Karim and Chorh Chuan Tan. – Oxford University Press, 2017. – 1728 p.
4. Medical Statistics at a Glance Text and Workbook. Aviva Petria, Caroline Sabin. – Wiley-Blackwell, 2013. – 288 p.

7.2. Auxiliary

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-HillEducation, 2012. – 320 p.
6. Health economics: textbook. – Vinnytsia: Nova Knyga, 2010. – 112 p.

7.3. Information resources on the Internet

1. World Health Organization. Access mode: www.who.int;
2. European Health for All Database. Access mode: www.euro.who.int/ru/home;
3. Cochrane Center for Evidence-Based Medicine. Access mode: www.cebm.net;
4. Cochrane Library. Access mode: www.cochrane.org;
5. National Medical Library of the United States. Access mode: www.ncbi.nlm.nih.gov/PubMed;
6. Canadian Evidence Center for Health. Access mode: www.cche.net;
7. Center for Disease Control and Prevention. Access mode: www.cdc.gov;
8. Public Health Center of the Ministry of Health of Ukraine. Access mode: www.phc.org.ua;
9. Ukrainian database of medical and statistical information "Health for All". Access mode: <http://medstat.gov.ua/ukr/news.html?id=203>;
10. British Medical Journal. Access mode: www.bmj.com;
11. Journal of Evidence-Based Medicine. Access mode: www.evidence-basedmedicine.com