

SYLLABUS

SOCIAL MEDICINE, PUBLIC HEALTH AND THE FUNDAMENTALS OF EVIDENCE-BASED MEDICINE WITH THE BASIS OF MODERN SCIENTIFIC RESEARCH.

academic and professional level	the second (master's) level of higher education
field of knowledge	22 «Healthcare»
specialty	221 «Dentistry»
academic qualification	Master of Dentistry
professional qualification	Dentist
academic and professional program	221 «Dentistry»
mode of study	full-time
course(s) and semester(s) of study of the discipline	3 course (VI semester)

INFORMATION ABOUT LECTURERS, WHO TEACH THE EDUCATIONAL DISCIPLINE

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MAIN CHARACTERISTICS OF THE ACADEMIC DISCIPLINE

The scope of the academic discipline (module)

Number of credits / hours – 3/90, of which:

Lectures (hours) – 10

Practical (hours) – 30

Independent work (hour). – 50

Type of control - Total modular control (TMC)

The policy of the academic discipline

Teaching at the Department of Social Medicine, Public Health, Organization and Economics of Health Care with medical and labor examination is determined by a system of requirements that the teacher imposes on the student when studying the discipline and is based on the principles of academic integrity.

Policy on adherence to the principles of academic integrity of higher education students:

- independent performance of educational tasks of current and final controls without the use of external sources of information (for example, except as permitted by the teacher, preparation of practical tasks during the lesson);
- write-offs during knowledge control are prohibited (including with the use of mobile devices);
- independent performance of individual tasks and correct registration of references to sources of information in case of borrowing of ideas, statements, information.

Policy on adherence to the principles and norms of ethics and deontology by higher education students:

- actions in professional and educational situations from the standpoint of academic integrity and professional ethics and deontology;
- compliance with the rules of the internal regulations of the department, to be tolerant, friendly and balanced in communication with graduate students and teachers, medical staff of health care institutions;
- awareness of the importance of examples of human behavior in accordance with the norms of academic integrity and medical ethics.

Attendance policy for higher education students:

- Attendance at all classes: lectures, practical, TMC is mandatory in order to adequately current and final assessment of knowledge.

Deadline policy and completion by higher education students:

- working off of missed classes takes place in accordance with the Regulations of electronic working off of missed classes and unsatisfactory grades by students, approved by the educational institution;

- works submitted by the applicant of higher education with violation of the term without valid reasons are evaluated at a lower grade (75% of the maximum, for example, thematic individual work);

- re-assessment of PMK in order to increase the assessment is not allowed, except in situations of non-compliance with the discipline program or non-attendance at the final control.

The process of teaching at the Department of Social Medicine, Public Health, Organization and Economics of Health Care with Medical and Labor Expertise is carried out in accordance with the norms of the current legislation of Ukraine and regulatory documents. When organizing the educational process, teachers and students act in accordance with:

Regulation on the organization of the educational process at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/department-npr/docs_links/hFOzsGd2coEVVYM0AEF8VtPOtMimiYDwpZuzE45m.pdf)

Regulation on the academic integrity of recipients of higher education and employees of Ukrainian Medical Stomatological Academy (www.umsa.edu.ua/storage/sections_nv/docs_links/zr3FjyN6oKY7qqQax2EfYjhdlnZg7YvhqyD58WZj.pdf)

Internal code of conduct for students of Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/department-npr/docs_links/5UHnaAQ5Rcxavl1x4m2vfERJSxiZbAg7dpOwgQhr.pdf)

Regulation on the organization and methods for assessment of educational activities of higher education recipients at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/department-npr/docs_links/lHIsr92pkNGgDGpYY0ih9T3ZYMtZ2HPPwTyZII3P.pdf)

Regulation on the organization of self-directed work of students at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/departmentnpr/docs_links/qupx2rSxk7BwRbsig4pkOqMRD11chF2evXfqmjP1.pdf)

Regulation on retaking missed classes and making up unsatisfactory grades by the recipients of higher education at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/departmentnpr/docs_links/9nJXWrypvCLFT0nr7mhYKZBnvFE3F5La0xva9rM2.pdf)

Regulation on the procedure of forming the individual educational trajectories for the recipients of higher education at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/departmentnpr/docs_links/XjBZJmf1XjK7kogNR9iM00EjgYRoKpL5WPhTNCmm.pdf)

Regulation on the procedure of credit transfer for academic disciplines and calculation of academic difference (https://www.umsa.edu.ua/storage/department-npr/docs_links/ATxr88KPzXpo3apxxoMYLBKbtFYTTTRjeGXNbEMxx.pdf)

Regulation on the appeal claim for the results of final control of academic performance for recipients of higher education (https://www.umsa.edu.ua/storage/department-npr/docs_links/EPSle1JrGCIVL7ObTKpOjhh2DIkiBonLuWMTNZJ0.pdf)

Regulation on rating the recipients of higher education at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/department-npr/docs_links/wWPIR7Hyj5fbvBsmPqLqR9nB5RTIDUkPuyDtsEJp.pdf)

Regulation on the financial incentives for academic success of students at Ukrainian Medical Stomatological Academy (https://www.umsa.edu.ua/storage/departmentnpr/docs_links/GSimPpxYmtovkl0Bs9pT7hGN9BM1ZA3J4cD9gS8F.pdf) and others.

Description of the academic discipline (summary)

The subject of the discipline is modern principles of evidence-based medicine, theoretical and methodological foundations of biostatistics, as well as patterns of population health and its protection system, including dental health, its promotion and organization of dental care.

Prerequisites and postrequisites of an academic discipline (interdisciplinary communications)

Pre-requisites. It is based on student`s studying of academic disciplines: the history of medicine, medical informatics, ethics, hygiene and ecology, epidemiology, sociology and medical sociology, the basics of economic theories.

Post-requisites. The knowledge and skills that are acquired after completing the study of this discipline are needed to study such clinical disciplines as: therapeutic dentistry, surgical dentistry, orthopedic dentistry, pediatric therapeutic dentistry, pediatric surgical dentistry, etc.

Also, this knowledge, skills and abilities are necessary for future physicians to form a preventive direction of their activities, taking into account the possible impact on the health status of the population of factors of different origin, risk assessment in the development of comprehensive medical and social measures in collaboration with the public health system; for organizing a medical diagnostic process, as well as evaluating its volume and quality; to study the legal and organizational foundations of the health care industry.

The aim and tasks of the academic discipline:

– *the aim of studying the academic discipline is* to acquire the necessary knowledge, skills and acquisition of competencies for research, analysis and evaluation of public health indicators, organization, resources and activities of the health care system, development of evidence-based medicine recommendations to prevent and eliminate the harmful effects of factors and improving the organization of medical care to the population, including dental.

– *the main tasks of studying the discipline are:*

- the mastering of the basic definitions and concepts of evidence-based medicine and biostatistics;
- the understanding of the laws governing the formation and methods of assessing of indicators of public health, including dental, the impact on him of medical, social, economic, environmental facts, conditions and lifestyle;
- the assimilation of the theoretical foundations and methods of assessing the health care system, the organization of various types of medical care, including dental, ensuring its availability and quality;
- the understanding of the basics, directions, tasks of the public health system, its functions, structure;

- the formation of knowledge on the scientific substantiation of recommendations for the prevention and elimination of adverse socio-economic and environmental factors and conditions for public health;
- the mastering of the principles of justification of health-improving measures to increase the level of public health, promotion of dental health;
- the mastering of the principles of the development of measures to improve the quality of medical care, including dental.

Competences and learning outcomes in accordance with the academic and professional program, the formation of which is facilitated by the discipline (integral, general, special)

Integral:

The ability to solve typical and complex specialized tasks and practical problems in the professional activities of the dentist using the principles, theories and methods of fundamental and clinical medical sciences, in the face of complexity and uncertainty.

General:

GC 1. Ability to abstract thinking, analysis and synthesis.

GC 2. Knowledge and understanding of the subject area and understanding of professional activity.

GC 3. Ability to apply knowledge in practice.

GC 4. Ability to communicate in English. Ability to use international Greco-Latin terms, abbreviations and clichés in professional oral and written speech.

GC 5. Ability to communicate in English.

GC 6. Skills in the use of information and communication technologies.

GC 7. Ability to search, process and analyze information from various sources.

GC 9. Ability to identify, pose and solve problems.

GC 11. Ability to work in a team.

GC 12. The desire to preserve the environment.

GC 13. Ability to act socially responsibly and consciously.

GC 14. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine.

GC 15. Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies. forms of physical activity for active recreation and a healthy lifestyle.

Special (professional, subject):

SC1. Ability to collect medical information about the patient and analyze clinical data.

SC 2. Ability to interpret the results of laboratory and instrumental research.

SC 3. Ability to diagnose: determine the preliminary, clinical, final, concomitant diagnosis, emergencies.

SC 4. Ability to plan and implement measures for the prevention of diseases of organs and tissues of the oral cavity and maxillofacial region.

SC 6. Ability to determine the rational mode of work, rest, diet in patients in the treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.

SC 7. Ability to determine the tactics of management of patients with diseases of organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases.

SC 8. Ability to perform medical and dental manipulations.

SC 10. Ability to organize and conduct medical evacuation activities.

SC 11. Ability to determine tactics, methods and emergency medical care.

SC 13. Ability to assess the impact of the environment on the health of the population (individual, family, population).

SC 14. Ability to maintain regulatory medical records.

SC 15. Processing of state, social and medical information.

Program learning outcomes:

PLO 1. Find and identify leading clinical symptoms and syndromes; according to standard methods, using preliminary data of the patient's anamnesis, data of the patient's examination, knowledge about the person, his organs and systems, to establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease.

PLO 2. Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the maxillofacial area, based on the results of laboratory and instrumental studies to assess information about the diagnosis (list 5).

PLO 3. Prescribe and analyze additional (mandatory and optional) methods of examination (laboratory, radiological, functional and / or instrumental), patients with diseases of organs and tissues of the oral cavity and maxillofacial region for differential diagnosis of diseases.

PLO 4. Determine the final clinical diagnosis in accordance with the relevant ethical and legal norms, by making an informed decision and logical analysis of the obtained subjective and objective data of clinical, additional examination, differential diagnosis under the supervision of a doctor in a medical institution.

PLO 5. To diagnose emergencies under any circumstances (at home, on the street, in a medical institution), in an emergency, martial law, lack of information and limited time.

PLO 6. To plan and implement measures for the prevention of dental diseases among the population to prevent the spread of dental diseases.

PLO 7. Analyze the epidemiological situation and carry out measures of mass and individual, general and local drug and non-drug prevention of dental diseases.

PLO 11. Carry out treatment of the basic dental diseases according to existing algorithms and standard schemes under the control of the doctor-head in the conditions of medical institution.

PLO 12. To organize medical and evacuation measures among the population, servicemen, in the conditions of an emergency situation, including martial law, during the detailed stages of medical evacuation, taking into account the existing system of medical evacuation support.

PLO 13. Determine the tactics of emergency medical care, using the recommended algorithms, under any circumstances on the basis of a diagnosis of emergency in a limited time.

PLO 14. Analyze and evaluate state, social and medical information using standard approaches and computer information technologies.

PLO 15. Assess the impact of the environment on the health of the population in a medical institution by standard methods.

PLO 16. To form the purposes and to define structure of personal activity on the basis of result of the analysis of certain public and personal needs.

PLO 17. Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.

PLO 18. To be aware of and guided in its activities by civil rights, freedoms and responsibilities, to raise the general cultural level.

PLO 19. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

PLO 20. Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.

PLO 21. Perform medical manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions.

PLO 22. Perform medical dental manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions.

PLO 23. Manipulate emergency medical care, using standard schemes, under any circumstances on the basis of a diagnosis of emergency (according to list 4) for a limited time.

PLO 24. Develop measures for the organization, integration of dental care and marketing of medical services, including dental services in the functioning of the health care institution, its unit, in a competitive environment.

Learning outcomes of the academic discipline:

upon completing their study in the academic discipline, students must:

To know: the state of health of the population, including dental, and its determinants; preventive measures, that aimed at preserving, strengthening of the state of health and social well-being of the population; organization of medical care, including dental assessment of the activities of the dentist, unit or institution that provides dental care; the impact of negative factors on their work, as well as measures to improve the activities of the doctor and the health institution.

To be able:

- To analyze and evaluate the state of health of the population, including dental.
- To analyze and evaluate state, social and medical information using standard approaches and computer information technologies.
- To determine health priorities, conduct needs assessments, develop and implement evidence-based strategies and propose evidence-based interventions.
- To assess the impact of adverse factors on the health status of the population, including dental health (individual, family, population) in the setting of health care according to standard methods.
- To organize the provision of medical services, provide quality control of the services provided at an appropriate level.
- To carry out advocacy, communication and social mobilization in the field of public health by using of different channels and communication techniques.
- Plan activities for the prevention of dental diseases among the population to prevent their spread.
- To formulate goals and create a structure of one's own activity based on the result of analysis of certain social and personal needs.
- To recognize the need and be guided in their activities by civil rights, freedoms and duties, to raise the general educational cultural level.

Thematic plan of lectures (by modules), specifying the basic issues, which are considered at the lecture

№	Topic title	Number of hours
1	<i>Social medicine and public health as a science. Evidence-based medicine, its importance for health practice.</i> 1. Social medicine and public health - a science that studies the laws of public health and its protection system. 2. The history of development and methods of social medicine: statistical, demographic, historical, experimental, epidemiological, economic, sociological, methods of expert assessments, modeling, forecasting.	2

	<p>3. The importance of social medicine for the formation of health care.</p> <p>4. Biostatistics as the main component of the evidence-based medicine system. The main stages of development of biostatistics.</p> <p>5. Theory and practice of evidence-based medicine, the basic principles of evidence-based medicine.</p> <p>6. The concept of clinical epidemiology.</p> <p>7. Classification of epidemiological studies.</p>	
2	<p><i>Public health: study methodology and characteristics of demographic processes.</i></p> <p>1. Targeted approaches to the definition of the concept of "health": general philosophical, individual theoretical, individual practical, population.</p> <p>2. Public health as a conditional statistical concept, its medical indicators: demographic (birth rate, mortality, average life expectancy); physical development; incidence; disability.</p> <p>3. Leading groups of factors that affect health indicators: people's standard of living and lifestyle, environmental conditions, biological factors, accessibility and quality of medical care.</p> <p>4. The subject and content of demography.</p> <p>5. The statics of the population. Analysis of its indicators.</p> <p>6. Analysis of indicators of the mechanical movement of the population.</p> <p>7. The calculation and analysis of indicators that characterize the natural movement of the population.</p> <p>8. Calculation and analysis of indicators of child and maternal mortality.</p> <p>9. Type of age structure of the population, its changes and consequences. "The Age Pyramid".</p> <p>10. Demographic burden.</p> <p>11. Life expectancy as an indicator of human development index.</p>	2
3	<p><i>General trends in the incidence of the population. Disability and physical development as indicators of population health.</i></p> <p>1. The concept of incidence, the purpose of its study.</p> <p>2. The concept of an epidemic and non-epidemic type of pathology. The medical and social significance of morbidity as a leading cause of temporary and permanent disability.</p> <p>3. The effect of morbidity on the needs of providing the population with medical care, on the health of future generations.</p> <p>4. Methods of studying the morbidity, the possibility of using individual methods, their advantages and disadvantages. International statistical classification of diseases, injuries and causes of death, principles of its construction and significance.</p> <p>5. The types of morbidity that are studied in Ukraine.</p> <p>6. The discrepancy between the morbidity of urban and rural population, different age and gender groups.</p> <p>7. Disability of the population. Methods of studying and calculating of its indicators. Features of disability due to dental diseases.</p> <p>8. Physical development as an indicator of health status. The role of the dentist in the study and evaluation of biological and morpho-functional development.</p>	2
4	<p><i>Health care systems. The main characteristics and organization of medical care.</i></p> <p>1. Comparative characteristics of health care systems in the world: governmental, insurance, private, mixed.</p> <p>2. The health care system in Ukraine. The content and directions of reforming of the health care system in modern conditions in Ukraine.</p> <p>3. Organization of outpatient, inpatient, ambulance and emergency care.</p> <p>4. The role of various medical institutions and their interaction in the provision of primary, secondary and tertiary medical care. Features of medical support for the rural population. Stages of providing medical care to the rural population.</p>	2

	<p>5. Standards for the quality of medical care and medical technology. The use of clinical protocols.</p> <p>6. Quality standards in the activities of dental institutions. The importance of licensing and accreditation of medical institutions to ensure the proper quality of medical care.</p>	
5	<p><i>Dental health and organization of dental care.</i></p> <p>1. Characteristic of the dental status of the population.</p> <p>2. Criteria of dental health, which are to be measured.</p> <p>3. The role of biogeochemical provinces and the level of anthropogenic contamination in the epidemiology of dental diseases.</p> <p>4. Accounting and reporting documents for the study of dental morbidity, the rules for filling them, indicators and indices.</p> <p>5. Staging and specialization in dental care.</p> <p>6. Organization of dental care for urban and rural populations. Offsite forms of dental care.</p> <p>7. Organization of dental care for pregnant women and children. Children's dental clinic (department), functions, structure, analysis of work.</p> <p>8. The content and organization of work of dentists.</p>	2
Total hours		10

Thematic plan of practical classes by modules and content modules, specifying the basic issues, which are considered at the practical class

№	Topic title	Number of hours
<i>Content module 1. Introduction to social medicine, public health, evidence-based medicine</i>		
1	<p><i>Social medicine and public health as a science. Evidence-based medicine, its importance for health practice.</i></p> <p>1. Social medicine and public health.</p> <p>2. Methodology of analysis and assessment of population health.</p> <p>3. Types of medical statistics.</p> <p>4. Definition of the concepts of "biostatistics", "evidence-based medicine", "clinical epidemiology".</p> <p>5. The main stages of development of biostatistics. Prominent scientists and their contribution to the development of biostatistics.</p> <p>6. Basic principles of evidence-based medicine.</p> <p>7. The triad of evidence-based medicine. Theory and practice of evidence-based medicine.</p> <p>8. Evidence-based medicine and the quality of clinical researches.</p> <p>9. The PICO principle for the formation of a clinical issue in evidence-based medicine.</p> <p>10. The concept of final results. Evidence-based medicine and quality of medical care.</p>	2
2	<p><i>Public health. Factors that determine the health of the population. Study methods.</i></p> <p>1. Targeted approaches to the definition of the concept of "health": general philosophical, individual theoretical, individual practical, population.</p> <p>2. Public health as a conditional statistical concept.</p> <p>3. Methods of studying of health.</p> <p>4. Health indicators: demographic (birth rate, mortality, average life expectancy); physical development; morbidity; disability.</p> <p>5. The leading groups of factors that affect the health of the population: the standard of living and lifestyle of people, the state of the environment, biological factors, the availability and quality of medical care.</p> <p>6. Health features of different age, gender and professional groups of population.</p>	

	<p>7. Public health strategies for health preservation.</p> <p>8. The methodology of the study and assessment of factors that affect the health of the population.</p> <p>9. Classification of risk factors that affect health. Methodological approaches to the study of factors that determine the levels of health of the population and its individual contingents.</p>	
<i>Content module 2. Biostatistics.</i>		
3	<p><i>Organization of statistical research.</i></p> <p>1. Types of statistical research.</p> <p>2. Formulation of a statistical hypothesis.</p> <p>3. Stages of a statistical research.</p> <p>4. The plan and program of statistical research.</p> <p>5. The sources of statistical information.</p> <p>6. Unit of observation.</p> <p>7. Types of studies by volume: selective and solid.</p> <p>8. The method of formation of the statistical aggregate</p> <p>9. The requirements for the formation of the statistical aggregate</p> <p>10. Classification of statistical research by time and volume</p> <p>11. Types of derived quantities</p> <p>12. Statistical tables, their characteristics, types, rules for constructing a table layout.</p>	
4	<p><i>Relative values. Graphical representation of statistical information.</i></p> <p>1. The concept of statistical indicators, their types, presentation form.</p> <p>2. Absolute data.</p> <p>3. Relative values, their practical significance.</p> <p>4. Types of relative values (intensive, extensive, ratio, visibility).</p> <p>5. The method of calculating of the relative values.</p> <p>6. Methodological basics for the use of relative values for data analysis.</p> <p>7. Graphical methods of data analysis.</p> <p>8. Types of diagrams [charts] (linear, bar, intra-bar, pie, radial, map chart and map diagram), the rules for their construction.</p> <p>9. Modern methods of graphic representation, infographics, chart animation, interactive charts.</p>	2
5	<p><i>Variation series. Average values.</i></p> <p>1. Average values in clinical and epidemiological studies, their practical significance.</p> <p>2. Elements and characteristics of variational series.</p> <p>3. Average values: their types, calculation methods, features of use.</p> <p>4. The concept of variation, its meaning.</p> <p>5. The variability of the parameters of the aggregate, estimation methods.</p> <p>6. Absolute indicators of variation (amplitude, standard deviation) and relative indicators of variation (coefficient of variation and determination), their assessment.</p> <p>7. Measures of variation, the concept of the laws of distribution, their types, characteristics.</p> <p>8. Assessment of the normality of the distribution, "popping up" variants.</p> <p>9. The rule of "three sigma", its practical use.</p>	
6	<p><i>Assessment of the likelihood of research results. Parametric criteria for assessing the probability of the results.</i></p> <p>1. Assessment of the probability of the results.</p> <p>2. The concept of internal and external validity.</p> <p>3. The level of significance for statistical criteria.</p> <p>4. Zero and alternative hypotheses.</p> <p>5. Testing of hypothesis.</p>	2

	6. The average error of the average and relative values. 7. Confidence interval. 8. Assessment of the probability of difference: Student t-test, calculation methodology, its assessment, typical errors of use. Student's table.	
7	<i>Standardization method. Correlation and regression analysis.</i> 1. Standardization method. The essence, value and application of the method to identify the impact of various risk factors on indicators of public health and the performance of medical institutions. 2. Problems of comparing of the statistical indicators in heterogeneous aggregates. 3. Types of standardization methods: direct, indirect, reverse. Characterization of the stages of the standardization methods. 4. The choice and calculation of the standard. 5. Calculation of expected numbers. 6. The calculation of standardized indicators. 7. The practical value of the standardization method. Studying the relationship between quantitative variables. 8. The concept of functional and correlation connection. 9. The strength and direction of connection. 10. Types of correlation coefficients. 11. The linear correlation coefficient of Pearson, his assessment, characteristic. 12. Nonparametric methods for evaluating the relationship - Spearman's rank correlation coefficient.	2
<i>Content Module 3. Health Statistics</i>		
8	<i>Methodology for calculating and evaluating of demographic indicators.</i> 1. Demography as a science. 2. Sources of information. 3. The dynamics of the quantitative and composition of the population in different regions of the world, countries and in Ukraine. 4. Gender and age composition of the population. 5. Natural movement of population. 6. Birth rate, indicators and factors that affect the birth rate. 7. Methodology for determining and evaluating the general and special indicators of birth rate. 8. Modern trends and regional characteristics of birth rate in Ukraine and the world. 9. General mortality, its leading causes in different regions, countries and in Ukraine, age and gender territorial features. 10. Analysis of the composition of the population by age, gender, place of residence. The importance of studying the age composition of the population. 11. Urbanization of the population as a socio-economic problem. 12. Aging of the population. 13. Analysis of indicators of average life expectancy and demographic burden. 14. Documents that are used to study the natural movement of the population. Birth registration procedure in Ukraine. 15. The essence of the concepts of "live birth", "stillbirth", "death of the fetus."	2
9	<i>Methodology for studying the morbidity of the population. Calculation and estimation of morbidity rates.</i> 1. The concept of morbidity, the purpose of its study, especially in Ukraine and in the world. 2. Medical and social significance of morbidity as a leading cause of temporary and permanent disability, mortality. 3. The impact of morbidity on the needs of the population in providing medical care, on the health of future generations.	2

	<p>4. Methods of studying of the morbidity, the possibility of using of the individual methods, their advantages and disadvantages. Factors that affect the completeness of morbidity data, depending on the methods used to study it.</p> <p>5. The international statistical classification of diseases, injuries and causes of death, the principles of its construction and significance.</p> <p>6. The types of morbidity that are studied in Ukraine. Differences in the morbidity of urban and rural population, different age and gender groups.</p> <p>7. Disability as an indicator of the health of the population, its medical and social significance.</p> <p>8. The study of morbidity according to requests for medical care.</p> <p>9. The methodology for determining the indicators of the incidence and prevalence of diseases, their assessment. Dynamics of indicators of general and primary morbidity, regional features.</p>	
<i>Content Module 4. Organization of the health care</i>		
10	<p><i>Primary medical care based on principles of family medicine.</i></p> <p>1. Types of medical care in accordance with current legislation.</p> <p>2. The essence of the concept of "primary health care" (PHC).</p> <p>3. Principles of family medicine.</p> <p>4. The principles of the organization of PHC on the basis of family medicine.</p> <p>5. The principle of formation of population contingent</p> <p>6. The role of the family doctor (general practitioner) in ensuring the medical needs of the population. Models of the family doctor.</p> <p>7. The role of the dentist (family dentist) in the functioning of the Institute of Family Medicine.</p>	2
11	<p><i>Secondary and tertiary medical care to the population. Emergency medical care to the population.</i></p> <p>1. The system of organization of the provision of secondary (specialized) medical care to urban and rural populations.</p> <p>2. The system of organization of the provision of tertiary (highly specialized) medical care to the urban and rural population.</p> <p>3. The structure, staff and activities of various types of medical institutions that provide the population with secondary and tertiary care. Measures to improve the organization and activities of medical institutions of the second and third levels of medical care.</p> <p>4. Hospital districts.</p> <p>5. Emergency medical care to the population. Organization of emergency medical care (EMC), its institution. Emergency stations.</p>	2
12	<p><i>Organization of medical examination of disability.</i></p> <p>1. Types of disability.</p> <p>2. Causes for temporary disability.</p> <p>3. Registration and procedure for issuing disability sheets for certain types and cases of temporary disability. The tasks of attending physicians during the examination of temporary disability.</p> <p>4. Medical Advisory Commission (MAC): functions, composition, organization of work.</p> <p>5. Reasons for persistent disability. Groups of disability.</p> <p>6. Medical and social expert commissions (MSEC), their types and functions.</p> <p>7. The methodology of the study and calculation of indicators of disability. Disability structure by cause and group.</p> <p>8. The dynamics of disability. Features of disability due to dental diseases.</p>	2
13	<i>Organization of dental care for the population. Analysis of the activities of the dentist and dental clinic.</i>	

	1. Analysis of the activities of the dentist and dental clinic. Accounting and reporting documents for the study of dental morbidity, the rules for filling them, indicators and indices. Stages and specialization of dental care. 2. Organization of dental care for urban and rural population. 3. Providing dental care with a doctor's visit. 4. Organization of dental care for pregnant women and children. 5. Children's dental polyclinic (department), functions, structure, analysis of work. 6. The importance of the dental city (district) clinic in the system of medical care for the population, its tasks, functions, structure, analysis of work. 7. The content and organization of work of dentists of the city (district) polyclinic. 8. Preventive work of the city (district) dental polyclinic and of the dentist.	
<i>Content module 5. Prevention.</i>		
14	<i>Dental Health Promotion. Evidence-based prevention of dental disease.</i> 1. Dental health. 2. Epidemiology of dental diseases. 3. The concept of "promotion of dental health" and its aspects (national, public, biotic, etc.). 4. Types, directions and levels of prevention in dentistry (primary, secondary and tertiary). 5. Sections of dentist preventive work. 6. Indices of caries and oral hygiene, inflammation of the gums.	2
15	Final Modular Control.	2
Total hours		30

Self-directed work

№	Topic title	Number of hours
	<i>Preparation for practical classes - theoretical training and development of practical skills</i>	<i>14</i>
	<i>Working topics not included in the plan of studies (list indicating the main issues that should be studied)</i>	
1	Designs of clinical and epidemiological researches. 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 an individual case and a series of cases. Analytical epidemiological studies. Cohort studies and case-control 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.	2
2	Analysis of time series. 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.	2
3	Non-parametric criteria for assessing the probability of the obtained results.	4

	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. Substantiation of cases of using non-parametric evaluation methods, their significance. Types of compared sets, their characteristics. Paired and multiple comparisons. 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. Fisher's exact criterion. Features of the use of nonparametric criteria: Mann-Whitney, Kruskala-Wallis.	
4	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. Features of application depending on design of research.	2
5	Screening. Methods for assessing the sensitivity and specificity of screening tests. 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.	2
6	Analysis of infant mortality rates. Infant mortality (infant mortality). The value of the indicator for assessing the health of the population, the level of socio-economic well-being and the development of society. Leading causes of infant mortality. Methods for determining the indicator, its dynamics in different regions of the world, individual countries and in Ukraine. The essence of the concepts of "live birth", "stillbirth", "fetal death". Calculation methods: by WHO, Rats. 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).	2
7	Medical and social aspects of the most important diseases. Medico-social significance of the study of 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 characteristics in the regions of the world and in Ukraine. Infectious diseases, quarantine diseases. Risk factors for infectious diseases.	2
8	Healthcare systems. Basic characteristics and organization of medical care. Health resources: labor, financial, logistical. The role of private doctors and other privately owned institutions in the system of providing dental care to the population. Procedure for organizing emergency medical care (EMC). EMC brigade types. Grounds for providing the service: self-appeal (or appeal of third parties); at the request of the attending physician. List of health care facilities. Assessment of the quality of medical care. National Health Service of Ukraine: main functions and tasks. Packages of medical services. Medical information systems.	2
9	The concept of quality and efficiency of medical care, their criteria. Components of the quality of medical care: efficiency, adequacy, efficiency, scientific and technical level. Industry standards in health care: standard of care,	1

	clinical protocol. table of material and technical equipment, medical form, Efficiency of medical care: medical, economic, social. External and internal quality control. Licensing. Accreditation.	
10	Organization of medical care for the elderly. Palliative and hospice care. Classifications according to the degree of population aging. Organization of gerontological centers. Palliative care: outpatient; at the patient's location. Principles of palliative care. Organization of hospice work, palliative care departments. Features of palliative care for children. Criteria for identifying a patient in need of palliative care. Monitoring plan for a patient in need of palliative care. Service packages of the National Health Service of Ukraine for palliative care: inpatient for adults and children; mobile adults and children.	1
11	Health emergencies. Emergencies and their types: man-made; natural character; social; military. Epidemics. Pandemics. Types of human poisoning: water, food, etc. Organization of medical and evacuation measures among the population, servicemen, in emergency situations, including martial law, during the detailed stages of medical evacuation, taking into account the existing system of medical evacuation support. Biological protection and biosafety.	2
12	Dental health of the population and organization of dental care. Criteria for dental health. Methods of studying dental morbidity. Risk indicators of dental diseases under STEPS. Determining the needs of the population in various types of medical care.	2
13	Advocacy, communication and social mobilization for dental health. Advocacy. 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. Development of preventive strategies to protect and promote health, reduce the negative impact of determinants on the state of dental health. Prevention programs and strategies for the prevention of dental diseases. Tasks and content of the work of public health centers, their structural units, interaction with other health care institutions.	2
14	Theoretical foundations of management. Laws, principles and methods of management. Management as a function of management. Facilities and subjects of management in health care. Stages of the management process. Information flows: internal and external. Methodology of management decision making. Methods of modeling management decisions. Using the decision tree. Control and types of control, its tasks and goals. Types of management: linear, staff, functional, matrix.	5
15	Preparation for the final modular control	5
Total hours		50

Individual tasks. For each topic of the practical lesson and for the topics of independent work, individual situational tasks are envisaged.

The list of theoretical questions for students' preparation for the final module control and semester final attestation

1. Social medicine and public health as a science. Methods of social medicine.
2. Targeted approaches to the definition of the concept of "health". Public health as a conditional statistical concept, its medical indicators.
3. Leading groups of factors that affect health outcomes.
4. Disability of the population. Methods of studying and calculating of indicators.

5. Physical development as an indicator of health status.
6. The role of the dentist in the study and evaluation of biological and morpho-functional development.
7. The concept of “dental health promotion” and its aspects.
8. Types, directions and levels of prevention in dentistry. The essence of health education in dentistry.
9. Principles, objectives and methods of health education in dentistry. Section of the preventive work of the dentist.
10. Indices of caries and oral hygiene, inflammation of the gums.
11. Biostatistics as the main component of the evidence-based medicine system, its importance for health practice.
12. Organization and stages of statistical research.
13. Object and unit of observation. Sources of statistical information.
14. Methods of statistical research on time and degree of coverage.
15. Methods of collecting statistical information. Types of questionnaires, methodology of its compilation.
16. Types, rules for constructing and filling out of statistical tables.
17. Relative values: definition, calculation procedure, value and application in the activities of the dentist.
18. Graphic depiction of biomedical data.
19. Variational series, their elements, characteristics and parameters.
20. Average values in the doctor's activities, their types, practical value, calculation methods.
21. The concept of variation, the variability of the parameters of the population, evaluation methods.
22. Methods for assessing of the likelihood of biomedical research (parametric).
23. The average error of the average and relative values, confidence interval.
24. Estimation of the probability of difference: Student's criterion, calculation methodology, its assessment.
25. The concept of nonparametric methods for assessing the reliability of statistical data.
26. Time series. Definition, types and analysis of time series.
27. Standardization method: essence and meaning.
28. Correlation-regression analysis of the relationship of factors and effective signs in medical research.
29. Screening. Methodology for assessing of the sensitivity and specificity of screening tests.
30. Screening. Methodology for assessing of the sensitivity and specificity of screening tests.
31. The subject and content of demography. Statics and dynamic of population. Censuses.
32. Birth rates, total mortality, natural growth. The concept of average life expectancy.
33. Infant mortality, its causes. Neonatal mortality, stillbirth, perinatal mortality, causes.
34. The concept of incidence, the purpose of its study.
35. Methods of studying of morbidity, the possibility of using individual methods, their advantages, disadvantages.
36. International Statistical Classification of Diseases.
37. The types of morbidity that are studied in Ukraine.
38. Medical and social aspects of the most important diseases.
39. The health care system in Ukraine. It's principles and organization.
40. Organization of primary medical care based on family medicine.
41. Organization of secondary and tertiary medical care.
42. Organization of inpatient care for the population, provision of beds, levels of hospitalization. Hospital District. Analysis of the activities of the hospital.
43. Features of the medical provision of the rural population.
44. Organization of obstetric and gynecological care. Women's reproductive health.
45. Organization of medical care for children.
46. Organization of medical care for the aged population. Hospice and palliative medical care.
47. Emergency medical care.
48. The concept of quality and effectiveness of medical care, their criteria. Quality standards in the operation of dental institutions.
49. Examination of temporary disability: tasks of attending physicians, medical advisory commission (MAC).

50. Types of temporary disability. The procedure for issuing and renewing of disability sheets for its various types.
51. Examination of persistent disability. Medical and social expert commissions (MSEC).
52. Groups and causes of disability. Organization of medical rehabilitation of people with disabilities.
53. Characteristic of the dental status of the population. Criteria of Dental Health.
54. Organization of outpatient dental care for the urban population. The structure and objectives of the city (district) dental clinic.
55. Inpatient care for dental patients. Dental department of the regional (central city) multidisciplinary hospital, main tasks, organizational structure.
56. Features of the organization of dental care to the rural population. Providing dental care with a doctor's visit.
57. Organization of dental care for pregnant women and children. Children's dental clinic (department), functions, structure, analysis of work.
58. The public health service in Ukraine, its tasks and content.
59. Theoretical foundations of management: laws, principles and management methods.
60. The purpose and objectives of the World Health Organization (WHO), its structure, forms of activity.

The list of practical skills required for the final module control and semester final assessment

1. Drawing up a plan and program of statistical research.
2. Calculation of relative values.
3. Graphical representation of statistical information.
4. Calculation of average values and assessment of the probability of the results.
5. Calculation of standardized indicators by various methods.
6. Calculation of correlation indicators.
7. Calculation and assessment of demographic indicators.
8. Calculation and estimation of incidence rates.
9. Calculation of indicators of primary health care.
10. Calculation of indicators of secondary health care.
11. Calculation of indicators of tertiary health care.
12. Calculation and assessment of indicators of activity of the dentist and dental clinic.

The form of final control of academic performance

The form of the final control is the final module control (FMC).

The system of continuous and final control

At each lesson, the student must receive a grade according to standardized generalized criteria for assessing student knowledge:

For 4-point scale	Score in EKTC	Evaluation criteria
5 (perfect)	A	The student shows special creative abilities, is able to acquire knowledge independently, without the help of the teacher finds and processes the necessary information, is able to use the acquired knowledge and skills for decision-making in unusual situations, convincingly argues answers, independently reveals own talents and inclinations, possesses not less than 90 % knowledge of the topic both during the survey and all types of control.
4 (well)	B	The student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standardized

		situations, independently corrects errors, the number of which is insignificant, has at least 85% knowledge of the topic as during the survey, and all types of control .
	C	The student is able to compare, summarize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently apply it in practice, control their own activities; to correct mistakes, among which there are significant ones, to choose arguments to confirm opinions, has at least 75% of knowledge on the topic both during the survey and all types of control.
3 (satisfactorily)	D	The student reproduces a significant part of theoretical material, shows knowledge and understanding of the basic provisions with the help of a researcher can analyze educational material, correct errors, among which there are a significant number of significant, has at least 65% knowledge of the topic, and during the survey, and all types of control.
	E	The student has the educational material at a level higher than the initial, a significant part of it reproduces at the reproductive level. has at least 60% knowledge of the topic both during the survey and all types of control.
2 (unsatisfactorily)	FX	The student has the material at the level of individual fragments that make up a small part of the material, has less than 60% knowledge of the topic both during the survey and all types of control.
	F	The student has the material at the level of elementary recognition and reproduction of individual facts, elements, has less than 60% knowledge of the topic as during the survey, and all types of control.

The maximum number of points assigned to students when mastering the module (credit) - **200 points**, including for current educational activities - **120 points**, according to the results of the module final control - **80 points**.

The final module control of the discipline is subject to full attendance of lectures and seminars and obtaining a minimum amount of points for current educational activities.

A student who has completed the curriculum and received at least 72 points for current activities is admitted to the final module control.

The form of final control is standardized and includes control of theoretical and practical training. In the last lesson (FMC) the student receives a booklet containing test questions with one correct answer and two situational tasks (according to the condition of the task it is necessary to calculate and evaluate the statistical coefficient and calculate the indicator that characterizes the health of the population, including dental).

Correspondence of the average score of current performance on the traditional 4-point scale to the total assessment of current performance per module

Average score for current performance (A)	Points for current success in the module (A * 24)	Points for FMK from the module (A*16)	Points for the module (A*24 + A*16)	EKTC	For 4-point scale
2	48	32	80	F FX	2 (unsatisfactorily)
2,1	50	34	84		

2,15	52	34	86				
2,2	53	35	88				
2,25	54	36	90				
2,3	55	37	92				
2,35	56	38	94				
2,4	58	38	96				
2,45	59	39	98				
2,5	60	40	100				
2,55	61	41	102				
2,6	62	42	104				
2,65	64	42	106				
2,7	65	43	108				
2,75	66	44	110				
2,8	67	45	112				
2,85	68	46	114				
2,9	70	46	116				
2,95	71	47	118				
3	72	50	122			E	3 (satisfactorily)
3,05	73	50	123				
3,1	74	50	124				
3,15	76	50	126				
3,2	77	51	128				
3,25	78	52	130	D	4 (well)		
3,3	79	53	132				
3,35	80	54	134				
3,4	82	54	136				
3,45	83	55	138				
3,5	84	56	140	C		5 (perfect)	
3,55	85	57	142				
3,6	86	58	144				
3,65	88	58	146				
3,7	89	59	148				
3,75	90	60	150				
3,8	91	61	152				
3,85	92	62	154				
3,9	94	62	156				
3,95	95	63	158				
4	96	64	160	B			
4,05	97	65	162				
4,1	98	66	164				
4,15	100	66	166				
4,2	101	67	168				
4,25	102	68	170				
4,3	103	69	172				
4,35	104	70	174				
4,4	106	70	176				
4,45	107	71	178				
4,5	108	72	180	A			

4,55	109	73	182		
4,6	110	74	184		
4,65	112	74	186		
4,7	113	75	188		
4,75	114	76	190		
4,8	115	77	192		
4,85	116	78	194		
4,9	118	78	196		
4,95	119	79	198		
5	120	80	200		

Teaching methods

- verbal (lecture, explanation, story, conversation, instruction);
- visual (observation, illustration, demonstration);
- practical (solving situational problems, drawing up a plan and program of statistical research, drawing up a plan of prevention programs).

Control methods

when studying the discipline there are: oral control, written, test control, checking the solution of situational problems, as well as methods of self-control and self-assessment.

Methodical support

1. The syllabus of discipline
2. Test questions to the topics of practical classes
3. The list of questions to the final modular control
4. Tasks for current and final control of knowledge
5. List of tasks for independent work
6. Lectures of the department with multimedia support.

Recommended Literature

Basic:

- Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health / J. G. Elmore, D. M. G. Wild, H. D. Nelson, D. L. Katz . - 5th ed. - St. Louis, Missouri : Elsevier, 2020. - x, 451 p. : il. ; 28 sm.
- Medical Statistics at a Glance Text and Workbook. Aviva Petria, Caroline Sabin. – Wiley-Blackwell, 2013. – 288 p.

Additional:

- Board Review in Preventive Medicine and Public Health. Gregory Schwaid. - ELSEVIER., 2017. – 450 p.
- Donaldson`s Essential Public Health, Fourth Edition. Liam J. Donaldson, Paul Rutter – CRC Press, Taylor&Francis Group, 2017 – 374 p.
- 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.
- Oxford Handbook of Public Health Practice, Fourth Edition. Charles Guest, Walter Ricciardi, Ichiro Kawachi, Iain Lang. – Oxford University Press, 2012. – 656 p.
- Primer of Biostatistics, Seventh Edition. Stanton A. Glantz – McGraw-HillEducation, 2012. – 320 p.
- Health economics: textbook. – Vinnytsia: Nova Knyga, 2010. – 112 p.

Information resources:

1. World Health Organization - <https://www.who.int>
2. European Health for All database- <http://www.euro.who.int/en/home>
3. Cochrane Center for Evidence-Based Medicine -

<https://www.cochrane.org/news/cochrane-launches-cochrane-evidence-essentials-introduction-evidence-based-medicine>

4. Cochrane Library - <https://www.cochranelibrary.com/?cookiesEnabled>
5. US National Library of Medicine – MEDLINE <https://www.ncbi.nlm.nih.gov/pubmed>
6. Center for Disease Control and Prevention - <https://www.cdc.gov/>
7. British Medical Journal www.bmj.com
8. Evidence-Based Medicine www.evidence-basedmedicine.com
9. Improving Intergovernmental Fiscal Relations in Ukraine, 2008 //

<http://go.worldbank.org/6C56QH4A70>

10. The Ukrainian health financing system and options for reform / By Valeria Lekhan, Volodymyr Rudyi, Sergey Shishkin: Health Systems Financing Programme WHO Regional Office for Europe, 2007. — 33 p. // <http://www.euro.who.int/document/e90754.pdf>

Developer (developers)

The syllabus was prepared and compiled
by an associate professor of department, Ph.D.

M.V.Khorosh,