

1. General information	
Faculty	4th year faculty of foreign students, specialty "Dentistry"
Educational program (field, specialty, level of higher education, form of education)	22 "Health Care", 221 "Dentistry", higher education of the second (master's) level, day form
Study year: 2023-2024	
Name of discipline, code (<i>e-mail address on the website of Danylo Halytskyi LNMU</i>) Epidemiology and Biosafety, kaf_epidemiology@meduniv.lviv.ua	
<i>Department (name, address, phone, e-mail):</i> Epidemiology 79005, Ukraine, Lviv, Zelena street, 12 tel. +38 (032) 276 28 35, fax +38 (032) 276 28 35	
<i>Head of the department (contact e-mail):</i> D Med Sci, Professor Vynograd Nataliya, kaf_epidemiology@meduniv.lviv.ua	
Study year (<i>study of the discipline</i>): the fourth	
Semester(<i>study of the discipline</i>) VII	
Type of discipline / module (required / elective) required	
<i>Teachers (names, surnames, scientific degrees and titles of teachers who teach the discipline, contact e-mail)</i> Nataliya Vynograd, D Med Sci, Professor; kaf_epidemiology@meduniv.lviv.ua Uliana Shul, PhD, Associate Professor; kaf_epidemiology@meduniv.lviv.ua	
Erasmus yes/no (<i>availability of the discipline for masters in the program Erasmus+</i>) no	
<i>Responsible person for the syllabus (person to be commented on the syllabus, contact e-mail)</i> Nataliya Vynograd, D Med Sci, Professor; kaf_epidemiology@meduniv.lviv.ua	
Number of credits ECTS -	
<i>Number of hours (lectures / practical classes / independent work of masters)</i> 4 / 10 / 16	
Study language : English	
<i>Information about consultations:</i> once a week during the semester according to a separate schedule of the department	
Address, telephone and work schedule: Department of Epidemiology; 79005, Ukraine, Lviv, Zelena street, 12; tel. +38 (032) 276 28 35, fax +38 (032) 276 28 35; 9⁰⁰- 17⁰⁰	
2. Short annotation to the course	
<p>Study program for specialty 221 "Dentistry" field of knowledge 22 "Health Care" is prepared on the basis of Order of Danylo Halytskyi Lviv National Medical University №1009-3 dated 16.03.2023 "About introduction in action of the curriculum of preparation of experts of the II (master's) level of field of knowledge 22 "Health care" of a specialty 221 "Dentistry" the IV year of study" approved by the Academic Council and approved by the order of the Rector of the University № 2020-z dated 06.23.2021 and it is recommended by educational department of Danylo Halytskyi LNMU.</p> <p>The organization of the educational process is carried out according to the credit-transfer system ECTS, which is based on a combination of modular learning technologies and assessment credits - units of measurement of the student's workload required for mastering the module.</p> <p>The study of "Epidemiology and Biosafety" is carried out during the 4th year of study and lays the foundations for the formation of students' skills and abilities determined by the ultimate goals of the discipline, and can be used by students in further study and professional activities.</p> <p>The program of the discipline is structured and presented by one module, which contains one content module in accordance with the requirements of curriculum development of disciplines. According to the curriculum of the 4th year of the Faculty of Dentistry, the study of the discipline</p>	

"Epidemiology and Biosafety" is given 30 hours, including 6 hours of lectures, 12 hours of practical classes and 12 hours of independent (extracurricular) work of masters.

The thematic plans of practical classes include issues of general and special epidemiology and biosafety. The general epidemiology includes the study of general patterns and manifestations of the epidemic process, the epidemiological method of research, measures to interrupt the transmission mechanism (disinfection and sterilization), modern means of prevention of infectious diseases and methods of their use, anti-epidemic measures in focus of infectious diseases.

In the section of special epidemiology, students study the epidemiological features of different groups of infectious diseases, Health-care associated infections and directions of prevention.

According to the method of organization, practical classes are aimed at controlling the assimilation of theoretical material and the formation of practical skills and abilities to solve practical problems.

3. The purpose and objectives of the discipline

The purpose of studying the discipline "**Epidemiology and Biosafety**" and the ultimate goals are set on the basis of the Educational Professional Characteristics of training a specialist in accordance with the block of its content modules (professional and practical training) and is the basis for building content.

3.1. The purpose of studying the discipline "Epidemiology and Biosafety" is to study the causes and mechanisms of occurrence and spread of infectious diseases, methods of their prevention and organization of anti-epidemic measures.

3.2. The main tasks of studying the discipline "Epidemiology and Biosafety" are:

- Identify priority problems of prevention of infectious diseases by groups and nosological forms.
- To interpret the epidemiological, social and economic significance of certain nosological forms.
- Be able to fill out documentation on registration and accounting of infectious patients.
- Be able to organize and conduct anti-epidemic measures in foci of infectious diseases.
- Be able to organize and conduct anti-epidemic measures in the foci of infections associated with the provision of medical and preventive care.
- Be able to interpret the results of the epidemiological method of research.
- Identify the epidemiological manifestations of the incidence of infections belonging to different groups (respiratory, intestinal, blood and infections of the outer integuments).
- Formulate working hypotheses on risk factors for morbidity by territory, among different population groups and in groups regarding specific infectious diseases. Interpret the manifestations of the epidemic process of specific nosological forms belonging to different groups of infections (respiratory, intestinal, blood and infections of the outer coverings).
- Use regulatory and instructional documentation of the Ministry of Health of Ukraine to eliminate foci of specific nosological forms belonging to different groups of infections (respiratory, intestinal, blood and infections of the outer coverings).

The final aims of discipline

Interpret the causes and patterns of the epidemic process.

Interpret patterns and features of the pathological and epidemiological process in infectious diseases that require special tactics for patient.

3.3 Competences and learning results, the formation of which is facilitated by the discipline

According to the requirements of the Standard of Higher Education (2016), the discipline "**Epidemiology and Biosafety**" provides students with the acquisition of **competencies**:

- **integrated**: the ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care, or in the learning process, which involves preventive and anti-epidemic measures and is characterized by complexity and uncertainty of conditions and requirements.

-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
GC4.	Ability to communicate in the state language both orally and in writing
GC 6.	Skills in the use of information and communication technologies
GC 7.	Ability to search, process and analyze information from various sources
GC 8.	Ability to adapt and act in a new situation
GC 9.	Ability to identify, pose and solve problems
GC 10.	The ability to be critical and self-critical
GC 11.	Ability to work in a team
GC 12.	The desire to preserve the environment
GC 13.	The 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. active recreation and leading a healthy lifestyle.
- professional:	
generalized object of professional activity - public health, in particular health maintenance; prevention of human diseases, as well as the impact of health problems on the population.	
PC 1.	Ability to collect medical information about the patient and analyze clinical data
PC 2.	Ability to interpret the results of laboratory and instrumental research
PC 13.	Ability to assess the impact of the environment on the health of the population (individual, family, population)
PC 14.	Ability to maintain regulatory medical records
PC 15.	Processing of state, social and medical information
4. Course details	

"Epidemiology and Biosafety" as a discipline is based on the knowledge gained by masters in the study of previous disciplines and integrates with them.

1. Biology. Features of structure of pathogenic biological agents, their vital activity, development cycles. Arthropods and features of their biology. The concept of the natural focus of infectious diseases.

2. Microbiology. Features of pathogens of infectious human diseases, their resistance in the environment. Methods of laboratory diagnostics in biotic and abiotic objects.

3. General hygiene and ecology. Ecology of pathogenic biological agents. Sources of contamination of the environment with pathogenic biological agents and measures to prevent their spread.

4. Social medicine and health care organization. Levels of medical care in the state. Statistical and analytical methods in medical practice.

5. Fundamentals of bioethics and biosafety. Ethical aspects in doctor's practice. The concept of stigma and discrimination.

6. Tuberculosis. Features of the causative agent of tuberculosis and its spread in the human population. Formation of primary and secondary aerosol. Features of specific protection in tuberculosis.

7. Infectious diseases. Clinical forms of infectious diseases, their connection with the mechanism of transmission. Periods in the course of infectious diseases and their features.

5. Program Studying Results (PSR)

PSR 6.	Plan and implement measures to prevent dental diseases among the population to prevent the spread of dental diseases
PSR 7.	Analyze the epidemiological situation and carry out measures of mass and individual, general and local drug and non-drug prevention of dental diseases
PSR 14.	Analyze and evaluate state, social and medical information using standard approaches and computer information technologies
PSR 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

Code of results	The content of the studying results	Reference to the competency matrix code
GC 1	Ability to abstract thinking, analysis and synthesis	<i>PR6, PR7, PR14, PR20</i>
Know 1	Know the methods of analysis, synthesis and further modern learning	<i>PR6, PR7, PR14, PR20</i>
Sk1	Be able to analyze information, make informed decisions, be able to acquire modern knowledge	<i>PR6, PR7, PR14, PR20</i>
C 1	Establish appropriate connections to achieve goals	<i>PR6, PR7, PR14, PR20</i>
AV1	Be responsible for the timely acquisition of modern knowledge	<i>PR6, PR7, PR14, PR20</i>
GC 2	Knowledge and understanding of the subject area and understanding of professional activity	<i>PR6, PR7, PR14, PR20</i>
Know 2	Have deep knowledge of the structure of professional activity	<i>PR6, PR7, PR14, PR20</i>
Sk 2	Be able to carry out professional activities that require updating and integration of knowledge	<i>PR6, PR7, PR14, PR20</i>
C 2	Ability to effectively form a communication strategy in professional activities	<i>PR6, PR7, PR14, PR20</i>
AV 2	To be responsible for professional development, ability to further professional training with a high level of autonomy	<i>PR6, PR7, PR14, PR20</i>
GC 3	Ability to apply knowledge in practical situations	<i>PR6, PR7,</i>

		<i>PR14, PR20</i>
Know 3	Have specialized conceptual knowledge acquired in the learning process	<i>PR6, PR7, PR14, PR20</i>
Sk 3	Be able to solve complex problems and problems that arise in professional activities	<i>PR6, PR7, PR14, PR20</i>
C 3	Clear and unambiguous communication of own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists	<i>PR6, PR7, PR14, PR20</i>
AV 3	Responsible for making decisions in difficult conditions	<i>PR6, PR7, PR14, PR20</i>
GC 4	Ability to communicate in the state language both orally and in writing	<i>PR6, PR7, PR14, PR20</i>
Know 4	Have a perfect knowledge of the state language	<i>PR6, PR7, PR14, PR20</i>
Sc 4	Be able to apply knowledge of the state language, both orally and in writing	<i>PR6, PR7, PR14, PR20</i>
C 4	Use the state language in professional and business communication and in the preparation of documents	<i>PR6, PR7, PR14, PR20</i>
AV 4	To be responsible for fluency in the state language, for the development of professional knowledge	<i>PR6, PR7, PR14, PR20</i>
GC 6	Skills in the use of information and communication technologies	<i>PR6, PR7, PR14, PR20</i>
Know 6	Have in-depth knowledge in the field of information and communication technologies used in professional activities	<i>PR6, PR7, PR14, PR20</i>
Sk 6	Be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge	<i>PR6, PR7, PR14, PR20</i>
C 6	Use information and communication technologies in professional activities	<i>PR6, PR7, PR14, PR20</i>
AV 6	Be responsible for the development of professional knowledge and skills	<i>PR6, PR7, PR14, PR20</i>
GC 7.	Ability to search, process and analyze information from various sources	<i>PR6, PR7, PR14, PR20</i>
Know 7	Know the ways and methods of acquiring knowledge and skills and use them to master modern knowledge	<i>PR6, PR7, PR14, PR20</i>
Sk 7	Be able to use methods and techniques of acquiring knowledge and skills to master modern knowledge	<i>PR6, PR7, PR14, PR20</i>
C 7	Be able to master knowledge using modern technologies	<i>PR6, PR7, PR14, PR20</i>
AV 7	Responsible for obtaining a certain amount and level of knowledge and skills necessary for practical activities	<i>PR6, PR7, PR14, PR20</i>
GC 8	Ability to adapt and act in a new situation	<i>PR6, PR7, PR14, PR20</i>
Know 8	Know the types and methods of adaptation, principles of action in a new situation	<i>PR6, PR7, PR14, PR20</i>
Sk 8	To be able to apply means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity	<i>PR6, PR7, PR14, PR20</i>
K 8	Establish appropriate connections to achieve results	<i>PR6, PR7, PR14, PR20</i>
AV 8	Be responsible for the timely use of self-regulatory methods	<i>PR6, PR7, PR14, PR20</i>
GC 9.	Ability to identify, pose and solve problems	<i>PR6, PR7, PR14, PR20</i>
Know 9	Know the responsibilities and ways to accomplish the tasks	<i>PR6, PR7, PR14, PR20</i>

Sk9	Be able to set goals and objectives to be persistent and conscientious in the performance of duties	<i>PR6, PR7, PR14, PR20</i>
C 9	Establish interpersonal relationships to effectively perform tasks and responsibilities	<i>PR6, PR7, PR14, PR20</i>
AV 9	Responsible for the quality of the tasks	<i>PR6, PR7, PR14, PR20</i>
GC 10.	The ability to be critical and self-critical	<i>PR6, PR7, PR14, PR20</i>
Know 10	Know thoroughly the subject and problem to understand the need to take into account critical remarks and self-criticism	<i>PR6, PR7, PR14, PR20</i>
Sk 10	Be able to evaluate their actions with analysis and self-criticism, take into account the opinions and critical remarks of others	<i>PR6, PR7, PR14, PR20</i>
C 10	Be able to achieve the intended goal through the use of the best strategies and ways of interpersonal communication and interaction	<i>PR6, PR7, PR14, PR20</i>
AV 10	Be responsible for the formation of adequate interpersonal communication and interaction, taking into account criticism and self-criticism	<i>PR6, PR7, PR14, PR20</i>
GC 11	Ability to work in a team	<i>PR6, PR7, PR14, PR20</i>
Know 11	Know the strategies and tactics of communication, laws and ways of communicative behavior	<i>PR6, PR7, PR14, PR20</i>
Sk 11	Be able to choose ways and strategies of communication to ensure effective teamwork	<i>PR6, PR7, PR14, PR20</i>
C 11	Be able to use effective methods and strategies of communication to ensure effective teamwork	<i>PR6, PR7, PR14, PR20</i>
AV 11	Be responsible for the results of teamwork	<i>PR6, PR7, PR14, PR20</i>
GC 12.	The desire to preserve the environment	<i>PR6, PR7, PR14, PR20</i>
Know 12	Know the problems of environmental protection and ways to preserve it	<i>PR6, PR7, PR14, PR20</i>
Sk 12	Be able to form requirements for themselves and others to preserve the environment	<i>PR6, PR7, PR14, PR20</i>
C 12	Make proposals to the relevant authorities and institutions on measures to preserve and protect the environment	<i>PR6, PR7, PR14, PR20</i>
AV 12	Be responsible for the implementation of environmental protection measures within its competence	<i>PR6, PR7, PR14, PR20</i>
GC 13.	The ability to act socially responsibly and consciously	<i>PR6, PR7, PR14, PR20</i>
Know 13	To realize their social and public rights and responsibilities	<i>PR6, PR7, PR14, PR20</i>
Sk 13	To form one's civic consciousness, to be able to act in accordance with it	<i>PR6, PR7, PR14, PR20</i>
C 13	Ability to convey one's public and social position	<i>PR6, PR7, PR14, PR20</i>
AV 13	Be responsible for your civic position and activities	<i>PR6, PR7, PR14, PR20</i>
GC 14.	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	<i>PR6, PR7, PR14, PR20</i>
Know 14	Know your rights, your rights and responsibilities as a member of society, the ways to its sustainable development	<i>PR6, PR7, PR14, PR20</i>

Sk 14	Be able to apply the rules of legislation to uphold the values of civil (free democratic) society	<i>PR6, PR7, PR14, PR20</i>
C 14	Adhere to the values of a democratic society in communication in the performance of their professional duties	<i>PR6, PR7, PR14, PR20</i>
AV 14	Uphold and make decisions that meet the values of civil (free democratic) society	<i>PR6, PR7, PR14, PR20</i>
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. active recreation and a healthy lifestyle	<i>PR6, PR7, PR14, PR20</i>
Know 15	Thoroughly know the subject and problem to choose the necessary strategy and tactics for making an adequate decision. Know the basic principles of medical ethics and use them in the performance of professional duties	<i>PR6, PR7, PR14, PR20</i>
Sk 15	Be able to make informed decisions, choose strategies and ways of interpersonal communication and interaction to ensure effective work and the best result. Be able to use the principles of medical ethics in professional activities	<i>PR6, PR7, PR14, PR20</i>
C 15	Be able to make an informed decision and communicate with individuals of certain structures, agencies for its implementation. Ability to discuss issues of medical ethics that arise during the performance of professional duties, to prevent stigma and discrimination in health care settings	<i>PR6, PR7, PR14, PR20</i>
AV 15	Be responsible for choosing a reasonable decision and its implementation. Be responsible for adhering to the principles of medical ethics in the performance of professional duties	<i>PR6, PR7, PR14, PR20</i>
PC1	Ability to collect medical information about the patient and analyze clinical data	<i>PR6, PR7, PR14, PR20</i>
Know 1	Have knowledge about the person, his organs and systems, and through surveys, use the necessary clinical examinations to establish	<i>PR6, PR7, PR14, PR20</i>
Sk 1	Be able to collect and evaluate the information obtained for further processing and diagnosis, including suspicious, probable and confirmed cases of infectious disease, disorders in the patient's health, including targeted to clarify the epidemiological history and identify syndromes of infectious diseases	<i>PR6, PR7, PR14, PR20</i>
C 1	Ability to communicate, gather the necessary information, use the patient's clinical examination	<i>PR6, PR7, PR14, PR20</i>
AV 1	Be responsible for the completeness of the information received for diagnosis	<i>PR6, PR7, PR14, PR20</i>
PC 2	Ability to interpret the results of laboratory and instrumental research	<i>PR6, PR7, PR14, PR20</i>
Know 2	Have knowledge about the person, his organs and systems, based on the results of laboratory and instrumental research (according to list 4)	<i>PR6, PR7, PR14, PR20</i>
Sk 2	Be able to evaluate information about the diagnosis in the conditions of the health care institution, its unit, using the standard procedure	<i>PR6, PR7, PR14, PR20</i>
C 2	It is reasonable to assign and evaluate the results of laboratory and instrumental research (according to list 4)	<i>PR6, PR7, PR14, PR20</i>
AV 2	Be responsible for deciding on the evaluation of laboratory and instrumental research results	<i>PR6, PR7, PR14, PR20</i>
PC 13.	Ability to assess the impact of the environment on the health of the population (individual, family, population)	<i>PR6, PR7, PR14, PR20</i>
Know 13	Know the existing methods, within the primary health care 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	<i>PR6, PR7, PR14, PR20</i>

	conditions, water supply; mode of activity and rest	
Sk 13	Implement a system of anti-epidemic and preventive measures, in terms of CHP, its unit on the basis of data on the health of certain contingents of the population and the impact on the environment, using modern methods, within the primary health care, to: <input type="checkbox"/> organization of rational nutrition, water supply; <input type="checkbox"/> mode of activity and rest; <input type="checkbox"/> formation of a favorable production environment; <input type="checkbox"/> primary prevention of diseases and injuries; <input type="checkbox"/> vaccine prophylaxis <input type="checkbox"/> prevention of bad habits; <input type="checkbox"/> prevention of unwanted pregnancy; <input type="checkbox"/> promotion of a healthy lifestyle. 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 care -sanitary assistance to the population	PR6, PR7, PR14, PR20
C 13	It is reasonable to address issues related to the organization of preventive and anti-epidemic measures	PR6, PR7, PR14, PR20
AV 13	Be responsible for deciding on the organization of anti-epidemic and preventive measures	PR6, PR7, PR14, PR20
ФК 14.	Ability to maintain regulatory medical records	PR6, PR7, PR14, PR20
Know 14	Know the regulations on reporting forms and medical records	PR6, PR7, PR14, PR20
Sc 14	Under the terms of its subdivision: <input type="checkbox"/> prepare an annual report on personal production activities, using official accounting documents, in a generalized form; <input type="checkbox"/> keep medical records of the patient and the population, using standard technology, on the basis of regulations	PR6, PR7, PR14, PR20
C14	To form conclusions on the basis of the analysis and statistical processing of the received information	PR6, PR7, PR14, PR20
AV 14	Be responsible for quality and timely medical records, statistical processing and analysis of information received	PR6, PR7, PR14, PR20
PC 15.	Processing of state, social and medical information	PR6, PR7, PR14, PR20
Know 15	Be able to analyze the information obtained	PR6, PR7, PR14, PR20
Sk 15	Under any circumstances, using standard procedures, including modern computer information technology, be able to: <input type="checkbox"/> determine the source and / or location of the required information depending on its type; <input type="checkbox"/> receive the necessary information from a specific source; <input type="checkbox"/> analyze the received information	PR6, PR7, PR14, PR20
C 15	To form conclusions on the basis of the analysis and statistical processing of the received information	PR6, PR7, PR14, PR20
AV 15	Be responsible for the quality processing and analysis of the received information	PR6, PR7, PR14, PR20

6. Course format and scope

Course format

(specify full-time or part-time) **full-time**

Вид занятий	Number of hours	Number of groups
lectures	4	According schedule
Practical classes	10	According schedule
Self-work	16	According schedule

7. Topics and content of the course

Code type of class	Topic	Studying content	Learning outcome code	Teacher
Lectures				
L-1	Epidemiology as a science. A subject, object and method of epidemiology. Classification of infectious diseases. Directions of the fight against infectious diseases	Historical aspects of epidemiology development. Modern definition of science, directions; connection of epidemiology with medical sciences. Epidemiological triad. Epidemiology of infectious conditions. Preventive and anti-epidemic measures. Three principles of control of infectious diseases. Directions of epidemiological diagnostics	<i>PR6, PR7, PR14, PR20</i>	According to schedule
L-2	Biosafety. Features of epidemic process at emergency. Organization of preventive and countermeasures in the time of emergency	The concept of biosafety and biosecurity. Biological threats and their types. Measures for sanitary protection of borders. Groups of infectious diseases, definition of extremely dangerous infections. Classification of pathogenic biological agents by groups of pathogenicity. Emergencies and their classification. Anti-epidemic measures in case of emergencies.	<i>PR6, PR7, PR14, PR20</i>	According to schedule
Practical classes				
P-1	Basic epidemiological terms. Three links of epidemic process and measures for them	The subject of epidemiology. The primary driving forces of the epidemic process. Measures to neutralize patients and carriers as sources of infectious diseases. Epidemiological significance of animals. Ways to infect humans from animals. Susceptibility to infectious agents, its types. Measures to influence the epidemic process	<i>PR6, PR7, PR14, PR20</i>	According to schedule
P-2	Rodent control (Deratization). Insect control (Desinsection). Disinfection and Sterilisation	The concept of rodent control. The role of rodents as a source of infectious diseases for humans. Types and methods of rodent control. The concept of disinsection. Types and methods of disinsection. The concept of disinfection. Types and methods of disinfection. Disinfection quality control. The concept of sterilization. Stages of sterilization. Quality control of	<i>PR6, PR7, PR14, PR20</i>	According to schedule

		all stages of sterilization		
P-3	Organization and carry out of immunization. Preparations for creation of active and passive immunity. Scheduled and under epidemic indication vaccination. Focus of infectious disease and measures for its eradication	Types of immunity and their characteristics. The value of the level of population immunity in the development of infectious diseases. Calendar of preventive vaccinations of Ukraine, its sections. Requirements for immunobiological drugs. List of medical contraindications to preventive vaccinations. Adverse events after immunization. Organization of immunoprophylaxis. The focus of an infectious disease. Examination of the focus of infectious disease. Filling in the relevant documentation. Measures to localize and eliminate the focus	<i>PR6, PR7, PR14, PR20</i>	According to schedule
P-4	Countermeasures in focus of infections with mechanisms of transmission of the agents: airborne, fecal-oral, transmissible and contact	Epidemiological characteristics of the group of respiratory infections. Mechanisms, ways and factors of transmission. Manifestations of the epidemic process (level of morbidity, manifestations of morbidity in time, by territories, among different groups of the population and groups). Preventive and anti-epidemic measures in the centers. Epidemiological characteristics of the group of intestinal infections. Mechanisms, ways and factors of transmission. Manifestations of the epidemic process (level of morbidity, manifestations of morbidity in time, by territories, among different groups of the population and groups). Preventive and anti-epidemic measures in the centers of intestinal infections Epidemiological features of infectious diseases with transmissible transmission mechanism. Mechanisms, ways and factors of transmission. Manifestations of the epidemic process (level of morbidity, manifestations of morbidity in time, by territories, among different groups of the population and groups). Preventive and anti-	<i>PR6, PR7, PR14, PR20</i>	According to schedule

		epidemic measures in foci of infectious diseases with a transmissible transmission mechanism. Epidemiological features of infectious diseases with contact transmission mechanism. Mechanisms, ways and factors of transmission. Manifestations of the epidemic process (level of morbidity, manifestations of morbidity in time, by territories, among different groups of the population and groups). Preventive and anti-epidemic measures in the centers of infectious diseases with the contact mechanism of transmission.		
P-5	Health-care associated infections (HCAI) and measures of their prevention. Peculiarity of preventive and countermeasures for dental practice' settings	Epidemiological features of infectious diseases associated with the provision of medical care. Factors influencing the development of the epidemic process. Classification of infections associated with the provision of medical care. The main pathogens. Sources of the pathogen; mechanisms, ways and factors of transmission of pathogens in infections associated with the provision of medical care. Risk groups and risk factors for various forms of these infections. Features of the organization and carrying out of preventive and anti-epidemic actions in health care institutions of a dental profile	PR6, PR7, PR14, PR20	According schedule
Self-studies				
SS-1	Self-study at classes (theoretical and practical education)	In terms of topics that are made for practical training	PR6, PR7, PR14, PR20	
SS-2	Epidemiological method	Complex epidemiological research method and its structure. Assessment of prevention problems based on the analysis of the structure and level of morbidity by groups and nosological forms of infectious diseases. Epidemiological diagnosis. Operational epidemiological analysis. Retrospective epidemiological	PR6, PR7, PR14, PR20	

		analysis. Analytical and experimental epidemiological studies		
SS-3	Epidemiology and prevention of diphtheria	Epidemiological features (source of pathogens, factors and ways of transmission, manifestations of the epidemic process), preventive and anti-epidemic measures in diphtheria	<i>PR7, PR14, PR20</i>	
SS-4	Epidemiology and prevention of dysentery	Epidemiological features (source of pathogens, factors and ways of transmission, manifestations of the epidemic process), preventive and anti-epidemic measures for shigellosis	<i>PR7, PR14, PR20</i>	
SS-5	Epidemiology and prevention of hepatitis B and C	Epidemiological features (source of pathogens, factors and ways of transmission, manifestations of the epidemic process), preventive and anti-epidemic measures for hepatitis B and C	<i>PR6, PR7, PR14, PR20</i>	
SS-6	Epidemiology and prevention of HIV/AIDS	Epidemiological features (source of pathogens, factors and ways of transmission, manifestations of the epidemic process), preventive and anti-epidemic measures in HIV infection	<i>PR6, PR7, PR14, PR20</i>	

The system of organization of classes, the use of interactive methods

During the study of the discipline "Epidemiology and Biosafety" traditional teaching methods are used: verbal, visual, practical; as well as methods of educational and cognitive activities: explanatory-illustrative, reproductive, method of problem statement, partial-search, research method. The methods of stimulation and motivation of educational and cognitive activities used are inductive and deductive teaching methods, methods of stimulation and motivation. Control methods as teaching methods are teacher control, self-control, mutual control, self-correction and mutual correction.

To master the discipline, the working curriculum provides for lectures, practical classes and independent work of students.

Multimedia support and tabular fund of the department are used for transfer and assimilation of knowledge during lectures.

For the transfer and acquisition of knowledge, skills and abilities in practical classes are used textbooks, guidelines for students on the topic of the lesson, collections of current regulations in the country, teaching materials, handouts, tools and kits for practical skills, sets of situational tasks for professional training, tabular fund of the department, etc. Interactive technologies are used during the training: watching educational films, the method of competing groups, etc.

Independent work of masters involves preparation for practical classes and elaboration of individual topics submitted for independent study. For this purpose textbooks, Methodical recommendations are developed and collections of the legal acts operating in the state, methodical materials, etc. are used. All necessary materials (abstracts and presentations of lectures, methodical support, normative documents) are presented on the information platform MISA.

8. Verification of learning outcomes

Current control is carried out on each class according to the specific goals of each topic and aims at check-mastering of educational material. The form of the current control during training sessions: incoming control of the material on topics of practical lessons and independent work; solving situational tasks and practical tasks; evaluation of the initial level of knowledge.

In evaluating the learning activities of master's preferred standardized methods of control: testing, situational problems, structured written work and structured control (the procedure), practical skills in conditions close to reality.

In evaluating the mastering of each topic for current educational activity the master score for the 4-point scale (traditional) scale taking into account the approved evaluation criteria for discipline. This takes into account all types of work, provided the curriculum. The master receives an assessment that is the average of all types of controlled current educational activity and includes the control of theoretical and practical preparation.

All marks by the traditional assessment scale are converted into points.

<i>Learning outcome code</i>	<i>Code type of lesson</i>	<i>Method of verifying learning outcomes</i>	<i>Enrollment criteria</i>
<i>GC 1, Know-1, Sk-1, K-1, AB-1</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	<p><i>Excellent</i> - the master has deeply studied the theoretical material of the topic of the lesson, is able to connect theory with practice, which allows him to solve situational problems of increased complexity.</p> <p><i>Good</i> - the master has firmly studied the theoretical material of the topic of the lesson, correctly applies theoretical knowledge in solving situational problems of medium difficulty.</p> <p><i>Satisfactory</i> - the master has studied only the basic material without details, solves only the easiest problems, assumes inaccuracies, chooses insufficiently clear wording, breaks the sequence in the statement of the answer.</p>
<i>GC 2, Know-2, Sk-2, , K-2, AB-2</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 3, Know-3, Sk-3, , K-3, AB-3</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 4, Know-4, Sk-4, , K-4, AB-4</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 6, Know-6, Sk-6, K-6, AB-6</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 7, Know-7, Sk-7, K-7, AB-7</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 8, Know-8, Sk-8, K-8, AB-8</i>	L1, L2, L3; C11, C12, C13, C14, C15,	test task; programmable control card; situational	

	CI6; SS1, SS2, SS3, SS4, SS5, SS6	task; open questions practical experience	<i>Unsatisfactory</i> - the master does not know much of the theoretical material of the topic of the lesson, makes significant mistakes, does not solve the situational problem.
<i>GC 9, Know-9, Sk-9, K-9, AB-9</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 10, Know-10, Sk-10, K-10, AB-10</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 11, Know-11, Sk-11, K-11, AB-11</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 11, Know-11, Sk-11, K-11, AB-11</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 12, Know-12, Sk-12, K-12, AB-12</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 13, Know-13, Sk-13, K-13, AB-13</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 14, Know-14, Sk-14, K-14, AB-14</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	
<i>GC 15, Know-15, Sk-15, K-15, AB-15</i>	L1, L2, L3; CI1, CI2, CI3, CI4, CI5, CI6; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience	

<i>GC 1, Know-1, Sk-1, K-1, AB-1</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience
<i>ΦK 1. Know-1, Sk-1, K-1, AB-1</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience
<i>ΦK 2, Know-2, Sk-2, K-2, AB-2</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience
<i>ΦK 13. Know-13, Sk-13, K-13, AB-13</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience
<i>ΦK 14. Know-14, Sk-14, K-14, AB-14</i>	C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience
<i>ΦK 15. Know-15, Sk-15, K-15, AB-15</i>	L1, L2, L3; C11, C12, C13, C14, C15, C16; SS1, SS2, SS3, SS4, SS5, SS6	test task; programmable control card; situational task; open questions practical experience

Criteria for evaluating the test task

Excellent - the master solved 95 % -100 % of the proposed set of test tasks;

Good - the master solved 80 % - 94 % of the proposed set of test tasks;

Satisfactory - the master solved 60.5 % -79 % of the proposed set of test tasks;

Unsatisfactory - the master solved less than 60.5 % of the proposed set of test tasks;

Evaluation criteria for the Programmable Control Card

Excellent - the master answered 95 % -100 % of questions correctly out of the total amount,

Good - the master answered 80 % - 94 % of questions correctly out of the total amount,

Satisfactory - the master answered 60.5 % -79 % of questions correctly out of the total amount,

Unsatisfactory - the master answered correctly less than 60.5% of the total amount.

Criteria for assessing the situational problem

Excellent - the master has deeply studied the theoretical material of the topic of the lesson, is able to connect theory with practice, which allows him to solve situational problems of increased

complexity.

Good - the master has firmly studied the theoretical material of the topic of the lesson, correctly applies theoretical knowledge in solving situational problems of medium difficulty.

Satisfactory - the master has studied only the basic material without details, solves only the easiest problems, assumes inaccuracies, chooses insufficiently clear wording, breaks the sequence in the statement of the answer.

Unsatisfactory - the master does not know much of the theoretical material of the topic of the lesson, makes significant mistakes, does not solve the situational problem.

Criteria for evaluating of open questions

The task includes 5 open-ended questions on the topic of practical training. The cost of each question is 1 point, or 20%. The results of the answers are summed up and a score is given on a five-point scale: 5 "excellent" - 4.5-5 points; 4 "good" - 3.5-4 points; 3 "satisfactory" - 3 points; 2 "unsatisfactory" - 2 or less points.

Each of the questions is evaluated according to the following criteria:

1 point - the master has mastered the theoretical material of the lesson; independently, competently and consistently with complete completeness answered questions; demonstrates deep and comprehensive knowledge, logically builds the answer, expresses his attitude to certain problems; is able to establish causal relationships, logically and reasonably draw conclusions; unmistakably answers questions using materials submitted for independent work.

0.75 points - the master has mastered the theoretical material of the topic of the lesson, teaches it; reveals the main content of educational material, gives incomplete definitions, allows minor violations in the sequence of presentation of material and inaccuracies in the use of scientific terms, vaguely formulates conclusions, expresses its views on certain issues, but assumes certain errors in the logic of theoretical content;

0.5 points - the master basically mastered the theoretical material of the lesson, fragmentarily reveals the content of educational material, shows the initial idea of the subject, when reproducing the basic educational material makes significant mistakes, gives simple examples, answers unconvincingly, confuses concepts.

0 points - the master has not mastered the study material of the topic, does not know the basic definitions, concepts; gives the wrong answer to the question.

Criteria for assessing practical skills

Excellent - the master has full practical skills, is able to connect theory with practice.

Good - the master has some practical skill, correctly applies the theoretical provisions in solving practical problems.

<i>Satisfactory</i> - the master has only the required minimum of practical tasks, familiar with the technique.		
<i>Unsatisfactory</i> - the master has no practical skill.		
<i>Final control</i>		
General evaluation system	Participation in the work during the semester - 100% on a 200-point scale	
Rating scales	traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Conditions of admission to the final control	The master attended all practical classes, fulfilled the requirements of the curriculum and received at least 120 points for current performance	
Type of final control	Methods of final control	Enrollment criteria
Credit	All topics submitted for current control must be included. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria, rules and procedures for evaluating the results of educational activities of masters" The calculation of the number of points is based on the grades obtained by the master on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows: number of points = (CA × 200): 5	The maximum number of points is 200. The minimum number of points is 120
9. Course policy		
<p>Academic integrity in the study of the discipline is ensured of Masters by: independent performance of tasks of current control, independent work without the use of external sources of information, except for those allowed for use, in particular during the evaluation of learning outcomes; personal presence at all lectures and practical classes, except in cases caused by good reasons.</p> <p>Teachers by: provision of quality educational services with the use of innovative approaches in the field of education in practical professional activities; independence of professional activity from political parties, public, religious organizations; raising the professional level through self-development and self-improvement, passing course training; compliance with the rules of internal regulations, labor discipline, corporate ethics; objective and unbiased evaluation of master's learning outcomes; control over the observance of academic integrity by masters; informing masters about typical violations of academic integrity and types of liability for its violations</p>		
10. Literature		
<u>Obligatory</u>		
1. Vynograd N. General epidemiology: study guide (IV a. l.) / N.O. Vynograd. — 4th edition, 2021,		

127 p.

2. Bryan Kestenbaum Epidemiology and Biostatistics: An Introduction to Clinical Research 2nd ed. 2019, 292 p.
 3. Giesecke J. Modern Infectious Disease Epidemiology. ISBN-10: 1444180029, CRC Press; 3 edition, 2017, 481 p.
 4. Antonisamy B., Prasanna S. Premkumar, Christopher S. Principles and Practice of Biostatistics, Publisher: Elsevier India. 2017, 390 p.
 5. Firas Kobeissy, Ali Alawieh, Kevin Wang et al. Leveraging Biomedical and Healthcare Data. Semantics, Analytics and Knowledge, Elsevier Inc. 2019, 225 p. <https://doi.org/10.1016/C2015-0-06232-3>
 6. Masakazu Washio, Gen Kobashi Epidemiological Studies of Specified Rare and Intractable Disease (Current Topics in Environmental Health and Preventive Medicine) 1st ed. 2019
 7. Joann G. and others Jekels Epidemiology, Biostatistics, Preventive Medicine and Public Health, 5th edition, 2014. ISBN: 978128411660
 8. Moyses Szklo, Javier Nieto Epidemiology beyond the basics, the 4th ed., 2019.
 9. Grant S. Fletcher Clinical Epidemiology: The Essentials, the 6th ed., 2020. ISBN: 9781975109554
 10. David D. Celentano Moyses Szklo Gordis Epidemiology, the 6th ed., 2019. ISBN: 9780323552295
 11. Weber, David J., and Thomas R. Talbot. Mayhall's Hospital Epidemiology and Infection Prevention. Ed. David J. (David Jay) Weber and Thomas R. Talbot. Fifth edition. Philadelphia, PA: Wolters Kluwer, 2021. Print.
 12. Bowers, David. Medical Statistics from Scratch : an Introduction for Health Professionals. Fourth edition. Hoboken NJ: WileyBlackwell, 2020. Print.
 13. Rothman, Kenneth J. et al. Modern Epidemiology. Fourth edition. Philadelphia: Wolters Kluwer / Lippincott Williams & Wilkins, 2021. Print.
 14. Kestenbaum, Bryan. Epidemiology and Biostatistics : Practice Problem Workbook. Cham: Springer International Publishing, 2019. Web.
 15. Sullivan, Lisa M. (Lisa Marie), Lisa M. Sullivan, and Lisa M. (Lisa Marie) Sullivan. Essentials of Biostatistics in Public Health. Third edition. Burlington, MA: Jones & Bartlett Learning, 2018. Print.
 16. Merrill, Ray M. Introduction to Epidemiology. Eighth edition. Burlington, MA: Jones & Bartlett Learning, 2021. Print.
 17. Rasmussen, Sonja A., and Richard A. Goodman. The CDC Field Epidemiology Manual. Ed. Sonja A. Rasmussen and Richard A. (Richard Alan) Goodman. Fourth edition. New York: Oxford University Press, 2019. Print.
- Tiwari, A. K. et al. Characterization, Epidemiology, and Management. San Diego: Elsevier Science & Technology, 2023. Print.

Additional sources:

18. World Health Organization - <http://www.who.int>
19. Center for Disease Control - <https://www.cdc.gov/>
20. National Library of Medicine – <http://www.nlm.nih.gov>
21. World Wide Web Virtual Library – Epidemiology <http://chanane.ucsf.edu/epidem/epidem.html>
22. Archive Epidemiology and Infection - www.ncbi.nlm.nih.gov/pmc/journals
23. Behavioral Risk Factor Surveillance System <https://www.cdc.gov/brfss/>
24. Global action plan on antimicrobial resistance <https://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/>

25. Health Technical Memorandum 01-04: Decontamination of linen for health and social care <http://www.gov.uk/government/collections/health-building-notes-core-elements>

26. www.promedmail.org

27. <http://www.pitt.edu/~super1/globalhealth/>

28. www.units.handbooks.uwa.edu.au

29. Oral Health Data website <https://chronicdata.cdc.gov/browse?category=Oral+Health>

30. National Oral Health Surveillance System (NOHSS) <https://www.cdc.gov/oralhealthdata/overview/nohss.html>

31. IHS Dental Portal <https://www.ihs.gov/DOH/documents/IHS/>

32. Association of State & Territorial Dental Directors [https://www.astdd.org/basic-screening-survey-tool/external icon](https://www.astdd.org/basic-screening-survey-tool/external-icon)

33. Summary of Infection Prevention Practices in Dental Settings <https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/assessments.html>

11. Equipment, logistics and software discipline

- The department has a methodical office, where a selection is collected: textbooks, manuals, guidelines, monographs on epidemiology, parasitology, disinfection, as well as related disciplines (infectious diseases, microbiology, virology); materials of scientific forums and periodicals on preventive medicine; educational materials, including co-authored with the staff of the department; sets of modern normative documents regulating work on epidemiology, parasitology, disinfection.
- Updated computer class: 10 computers, multifunctional copying equipment, printer. Internet access. Computer programs are used: Linux Xubuntu, Libre Office, Epi Info, Epi Map, Ukrvac, Statistica. Multimedia projector, laptop, screen. Means of individual protection against biological threats (anti-plague suits). Sets of disinfectants and sterilizers. Sets of immunobiological drugs. Algorithms of observance of standard procedures in the context of infection control. Tabular fund (168 tables). Educational films (2).

12. Additional Information

- Lectures are held in the lecture hall in the building of Danylo Halytsky LNMU, Zelena st., 12
Website: kaf_epidemiology@meduniv.lviv.ua
- A student scientific circle has been created and is actively working at the department

Sylabus is prepared by:

Chief of Department, D Med Sci, Professor

N.O. Vynograd

PhD, Associate Professor

Z.P. Vasylyshyn

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