

MINISTRY OF HEALTH OF UKRAINE
DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

SYLLABUS

for the discipline

" METHODOLOGY OF EVIDENCE-BASED MEDICINE "

VB 1.48

**preparation of the 4-year students of the second (master`s) level of higher education,
branch of knowledge 22 "Health care",
specialty 221 "Dentistry"**



1. General information	
Faculty	Foreign Students
Educational program	22 Healthcare, 221 Dentistry, second (master's) level of higher education
Academic year	2023-2024
Name of discipline, code	Methodology of evidence-based medicine VB 1.48 https://new.meduniv.lviv.ua/kafedry/kafedra-sotsialnoyi-medytsyny-ekonomiky-ta-organizatsiyi-ohorony-zdorov-ya/
Department	Department of social medicine, economics and organization of health care Address: Zelena, 12 tel. +38 032 276-81-67 e-mail: kaf_socmed@meduniv.lviv.ua
Head of the department	Associate professor Taras Gutor taras_gutor@ukr.net
Year of study	4 year of study
Term	7 or 8 terms
Type of discipline / module	Selective
Teachers	Associate Professor Taras Gutor taras_gutor@ukr.net Associate Professor Oksana Kovalska oksanaromkov@ukr.net Assistant of the department Iryna Hupalo irahup@gmail.com Senior teacher of the department Natalia Timchenko timchenkonataliaf@ukr.net Associate Professor Natalia Zaremba natalyazaremba@gmail.com Assistant of the department Roman Lysyuk socmed_ES@i.ua
Erasmus	no
The person responsible for the syllabus	Assistant of the department Iryna Hupalo
Number of ECTS credits	2 credits
Number of academic hours	60 hours (0 hours of lectures, 30 hours of practical classes, 30 hours of self-guided study of students)
Language of study	English
Information on consultations	Consultations - according to the schedule for the course once a week from 3.30 p.m. till 5.00 p.m.
Address, telephone and regulations of the clinical base, office	Clinical base is not provided
2. Short description to the course	
The educational discipline "Methodology of evidence-based medicine" is an optional course, the main study of which is modern principles of evidence-based medicine, levels of evidence and degrees of recommendations, which will allow dental students to acquire information on the problems of an evidence-based approach in the field of dentistry; to reveal the potential of evidence-based medicine as a technology for preserving health and improving the quality of life.	
3. The purpose and objectives of the course	
The purpose of the course "Methodology of evidence-based medicine" is to master the necessary knowledge, skills and acquire competences in research, analysis and assessment of population health indicators, organization, resource provision and activity of the health care system, development of recommendations for prevention and elimination from the standpoint of evidence-based medicine harmful effects of factors and improving the organization of dental care for the population.	
Learning goals:	

- mastering modern principles of evidence-based medicine;
- familiarization with methods of definition and analysis of basic biostatistical indicators and criteria;
- assimilation of methodical and theoretical bases of formation of statistical aggregates for their further adequate analysis;
- mastering the methods of determining, analyzing and evaluating the main indicators of dental health according to separate criteria and in relation to the factors affecting it.

Competences and learning outcomes of the discipline:

• **General competences (GC):**

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 the state language orally and in writing

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-8 – Ability to adapt and act in a new situation.

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

GC-10 – 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 – Ability to act socially responsibly and consciously.

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.

GC-15 – Ability to preserve and increase 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, technology and technology, use different types and forms of physical activity for active recreation and a healthy lifestyle.

• **Special (professional, objective) competences (PC):**

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-4 – Ability to plan and implement measures for the prevention of diseases of organs and tissues of the oral cavity and maxillofacial area.

PC-5 – Ability to design the process of providing medical care: to determine approaches, plan, types and principles of treatment of diseases of organs and tissues of the oral cavity and maxillofacial area.

PC-10 – Ability to organize and conduct medical and evacuation measures.

PC-12 – Ability to organize and conduct screening examinations in dentistry.

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.

PC-16 – Ability to organize and conduct rehabilitation activities and care for patients with diseases of the oral cavity and maxillofacial area.

PC-17 – Ability to legally support one's own professional activity.

• **Digital competences**

4. Prerequisites of the course

"Methodology of evidence-based medicine" as an educational discipline:

- is based on students' study of academic disciplines: history of medicine, medical informatics and computer technologies, ethics, hygiene and ecology, epidemiology, sociology and medical sociology, fundamentals of economic theories;

- contributes to the formation of the preventive direction of activities of future dentists, taking into account the possible impact on the health of the population of factors of various origins, risk assessment in the development of complex medical and social measures in interaction with the public health system;

- contributes to the formation of an economic worldview and basic competence characteristics regarding the methodology of economic analysis of the activity of dental institutions in modern conditions.

5. Program learning outcomes/ results

List of learning outcomes /results		
Codes of Learning Outcomes	Description of the learning outcome	Reference to the code of the competence matrix of the program learning outcome in the Standard of higher education
<i>Knowledge -1</i>	Specialized conceptual knowledge acquired in the process of study and/or professional activity at the level of the latest achievements, which is the basis for original thinking and innovative activity, in particular in the context of research work	<i>PR-6, PR-7, PR-12, PR-16</i>
<i>Knowledge -1</i>	Critical understanding of problems in education and/or professional activity and at the border of subject areas	<i>PR-12, PR-14, PR-15, PR-20</i>
<i>Skills -1</i>	Solving complex tasks and problems that requires updating and integrating knowledge, often in conditions of incomplete/insufficient information and conflicting requirements	<i>PR-15, PR-17, PR-18, PR-19</i>
<i>Skills -2</i>	Conducting research and/or innovative activities	<i>PR-12, PR-14, PR-15, PR-20</i>
<i>Communication -1</i>	Clear and unambiguous presentation of one's own conclusions, as well as the knowledge and explanations that justify them, to specialists and non-specialists, in particular to persons who are studying	<i>PR-15, PR-17, PR-18, PR-19</i>
<i>Communication -2</i>	Use of foreign languages in professional activities	<i>PR-15, PR-17, PR-18, PR-19</i>
<i>Autonomy and responsibility -1</i>	Making decisions in difficult and unpredictable conditions, which requires the application of new approaches and forecasting	<i>PR-6, PR-7, PR-12, PR-16</i>
<i>Autonomy and responsibility -2</i>	Responsibility for the development of professional knowledge and practices, assessment of the team's strategic development	<i>PR-12, PR-14, PR-15, PR-20</i>

6. Format and scope of the course

Course Format	full-time	
Type of academic classes	Number of hours	Number of groups
lectures	0	
practical	30	
seminars	0	
self-study	30	

7. Topics and description of the course

Code of occupation type	Topic	Content of learning	Code of learning outcome	Teacher
P-1	History of development and world experience of evidence-based medicine	The concept of evidence-based medicine. Prerequisites for the emergence of evidence-based medicine. Principles of scientific and evidence-based practice. The history of the development of evidence-based medicine. World development experience.	PR-7, PR-14, PR-17, PR-18	according to the schedule of groups
P-2	Stages of evidence-based medicine	Formulation of a clinical question. Systematic search for evidentiary data. Evaluation of the reliability of evidence data, their clinical significance. Application of results in practice. Assessment of work done.	PR-7, PR-14, PR-17, PR-18	according to the schedule of groups
P-3	Dental health of the population and organization of dental care	Characterization of the dental status of the population. Measurable dental health criteria. The role of biogeochemical provinces and the level of anthropogenic pollution in the epidemiology of dental diseases.	PR-6, PR-7, PR-15, PR-17, PR-18	according to the schedule of groups

		Organization of dental care for the population. Outgoing forms of providing dental care.		
P-4	Patient rights in scientific research	Information: How to participate in clinical dental research. Ethics of clinical research. Obligations of the parties. Accidents. Declaration of Helsinki of the World Medical Association "Ethical principles of medical research with the participation of a person as an object of research".	PR-17, PR-18	according to the schedule of groups
P-5	The role of patients in scientific research	Adherence to the principles when conducting a medical and biological experiment. Clinical research as a stage of working out management decisions. Types of clinical research. Design of clinical studies. Duration of clinical trials.	PR-17, PR-18	according to the schedule of groups
P-6	Evidence-based prevention of dental diseases	The concept of "promotion of dental health" and its aspects. Types, directions and levels of prevention in dentistry. Section of preventive work of a dentist. Indices of caries and oral hygiene, inflammatory process of gums.	PR-7, PR-15, PR-17	according to the schedule of groups
P-7	The concept of quality and efficiency of dental care, their criteria	Organization of an expert assessment of the activities of medical institutions, their divisions and medical workers. Methods of determining the level of treatment quality, models of final results. Components of quality: structural quality; quality of technologies; quality of results. The concept of medical, social and economic efficiency of medical care. Integral coefficient of efficiency. Quality standards of medical care. Standards of medical technologies. Application of clinical protocols.	PR-7, PR-14, PR-15, PR-18	according to the schedule of groups
P-8	Advocacy, communication and social mobilization in the interests of dental health	Principles, tasks and methods of information and explanatory activity (advocacy) in dentistry. The essence of communication and social mobilization in the interests of dental health.	PR-7, PR-14, PR-15, PR-17, PR-19, PR-20	according to the schedule of groups
P-9	Evidence-based dentistry and marketing.	Evidence-based medicine as a means of promoting medicinal products. Signs of improper advertising of medicinal products. Information that misleads the consumer. Unfair competition. Concept of final surrogate point. Development of the National Medicinal (Pharmaceutical) Policy.	PR-7, PR-14, PR-15, PR-17, PR-18	according to the schedule of groups
P-10	Scientific publication as a mechanism for implementing scientific research	Scientific publications and their importance in scientific work. The main functions of publications. Types of scientific publication. The structure of a scientific publication. Sections of a scientific publication. Rules for design of publications. Selection and analysis of scientific publications for publication.	PR-7, PR-14, PR-15, PR-17	according to the schedule of groups
IWS-1	Clinical epidemiology, its significance for stomatology	Grouping of statistical data, methods, values. Concept of multidimensional classifications. Encoding and encryption	PR-7, PR-14,	according to the schedule of groups

		of data. Program for the development and compilation of statistical material.	PR-17, PR-18	
IWS-2	Modern trends in the development of evidence-based medicine in dentistry	Evidence-based medicine in the dental practice of Ukraine and the world. International experience of evidence-based medicine. Areas of dental science formed in the process of developing evidence-based medicine technologies.	PR-14, PR-17, PR-18	according to the schedule of groups
IWS-3	Principles and practice of dental audit	Dental audit: definition, purpose and purpose. Principles and practice. The process of planning and conducting an audit. Clinical audit. Audit of the effectiveness of dental care. Error analysis.	PR-14, PR-17, PR-18	according to the schedule of groups
IWS-4	Advantages and disadvantages of different sources of dental information	Content of scientific medical literature. Searching for information on the Internet using evidence-based medicine filters. Structure and content of a scientific publication. The main sections of a scientific publication.	PR-14, PR-17, PR-18	according to the schedule of groups
IWS-5	Quantitative and qualitative indicators of the analysis of medical and statistical information	Functions of statistical indicators. Requirements for statistical indicators. Statistical indicators and their measurement units, conditions of their scientific application.	PR-14, PR-17, PR-18	according to the schedule of groups
IWS-6	Medical errors and liability	Violation of professional duties by doctors. Liability for breach of professional duty. Criminal and administrative violations	PR-14, PR-17, PR-18, PR-19, PR-20	according to the schedule of groups
IWS-7	The Cochrane Library and the Cochrane Collaboration	Organization of activities of Cochrane cooperation. Electronic editions of the Cochrane Library. Systematic review as a secondary source of evidence. The concept of meta-analysis. Database of evidence-based medicine.	PR-7, PR-14, PR-15, PR-17, PR-18	according to the schedule of groups
IWS-8	Методи проведення наукового дослідження	Planning a statistical study. The purpose and objectives of the research. Sources of statistical information. Object of research, unit of observation. Types of research by volume.	PR-14, PR-15, PR-17, PR-18	according to the schedule of groups

8. Verification of learning outcomes

Current control

is carried out during academic classes and aims to check the knowledge of learning material by students. Forms of assessment of current educational activities include control of theoretical and practical skills. The final grade for the current academic activity is based on a 4-point (national) scale

Code of learning outcome	Code of occupation type	Method of verifying learning outcomes / results	Evaluation criteria
AR-1, AR-2	P-1-10	Checking of a written task for extracurricular self-preparation for practical lesson	passed / not passed
AR-1, AR-2,	IWS-1-8	Checking of a written task for self-study	passed / not passed
Kn-1, Kn-2, S-1, S-2, C-1, C-2	P-1-10, IWS-1-8	Oral survey at a practical lesson on the topic of practical lesson and independent work	"2" - <60% of correct answers; "3" - 60-69%, "4" - 70-89%, "5" - 90-100%.
Kn-1, Kn-2, S-1, S-2,	P-1-10, IWS-1-8	Test control at a distance practical lesson	"2" - <70% of correct answers;

C-1, C-2			"3" - 70-79%, "4" - 80-89%, "5" - 90-100%.
Kn-1, Kn-2, S-1, S-2, C-1, C-2	P-1-10, IWS-1-8	Demonstration of the practical skill of calculating indicators	"2" - <60% of correct answers; "3" - 60-69%, "4" - 70-89%, "5" - 90-100%.
Kn-1, Kn-2, S-1, S-2, C-1, C-2	P-1-10, IWS-1-8	Demonstration of practical skills to evaluate and analyze research results	"2" - <60% of correct answers; "3" - 60-69%, "4" - 70-89%, "5" - 90-100%.

Final control

General evaluation system	Academic performance 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 student attended all practical (laboratory, seminar) classes and received at least 120 points for classroom academic performance	
Type of final control	Methods of final control	Criteria of Evaluation
Credit	Students have to pass all topics by the thematic schedule. Grades by 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 student academic performance"	<i>The maximum number of points is 200.</i> <i>The minimum number of points is 120</i>

The maximum number of points that a student can score for the current academic performance to pass a credit is 200 points.

The minimum number of points that a student has to score for the current academic performance to receive credit is 120 points.

The calculation of the number of points is based on the grades received by the student by a 4-point (national) scale during the course of the discipline, by calculating the arithmetic mean (A), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$x = \frac{A \times 200}{5}$$

9. Course policy

During the course, teachers promote a policy of academic integrity.

10. Literature

Basic

1. Public health: textbook for students. higher med. education institutions Vinnytsia: "New book", ed. 3. 2013. 560 p.
2. Biostatistics: textbook / V. F. Moskalenko, O. P. Gulchii, M. V. Golubchikov, etc.; under the editorship V. F. Moskalenko. K.: Book plus, 2009. 184 p.
3. Methodical recommendations for practical classes.

Additional

1. Health care statistics: teaching method. manual for self studied disc. / H. S. Stolyarov, Yu. V. Voronenko, M. V. Golubchikov. K.: KNEU, 2000. 187 p.
2. Oxford Textbook of Global Public Health, 6th edition. / Edited by Rogers Detels, Martin Gulliford, Quarraisha Abdool Karim and Chorh Chuan Tan. Oxford University Press, 2017. 172 p.
3. Medical Statistics at a Glance Text and Workbook. / Aviva Petria, Caroline Sabin. Wiley-Blackwell, 2013. 288 p.
4. Legislation of Ukraine. URL: zakon.rada.gov.ua/
5. Medical legislation of Ukraine. URL: http://mozdocs.kiev.ua/
6. Statistical data of Ukraine. URL: http://www.ukrstat.gov.ua/
7. Statistical data of the Lviv region. URL: https://www.lv.ukrstat.gov.ua/
8. Public Health Center of the Ministry of Health of Ukraine URL: https://phc.org.ua/
9. Ukrainian database of medical and statistical information "Health for all". URL: http://medstat.gov.ua/ukr/news.html?id=203

10. World Health Organization URL: www.who.int
11. WHO European Regional Office URL: www.euro.who.int/ru/home
12. Cochrane Center for Evidence-Based Medicine URL: www.cebm.net
13. Cochrane Library URL: www.cochrane.org
14. US National Library of Medicine - MEDLINE PubMed URL: www.ncbi.nlm.nih.gov/PubMed
15. Canadian Center for Evidence in Health Care URL: www.cche.net
16. Centers for Disease Control and Prevention URL: www.cdc.gov
17. British Medical Journal URL: www.bmj.com
18. Journal of Evidence-Based Medicine URL: www.evidence-basedmedicine.com

11. Equipment, logistics and software of the discipline / course

- Curriculum, thematic and calendar plans of practical classes and independent extracurricular work
- Educational and methodological developments on the topic of the lesson (theoretical presentation of the topic of the lesson, control questions, situational tasks for independent work and a list of recommended literature)
- Educational textbooks and manuals from the library
- Computer and multimedia projector

12. Additional information

All the necessary information for the educational process –thematic schedules of classes and extra classes, lecture materials, guidelines for practical classes, independent work of students, test control of knowledge is available in Misa: <http://misa.meduniv.lviv.ua/course/view.php?id=4364>

Syllabus compiler
Ass. Iryna Hupalo

Head of department
Assoc. Prof., PhD Gutor T.H.