

MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY
 Department of general and clinical epidemiology and biosafety

Syllabus of the academic discipline
 "Basics of scientific research in medicine"

Scope of the academic discipline	Total hours per discipline: 90 hours, 3.0 credits. Semesters: V - VI. 3 years of study.
Days, time, place of training disciplines	Days and time - according to the class schedule Department of general and clinical of epidemiology and biosafety, str. Primorsky Boulevard, 13
Teacher(s)	Golubyatnikov M.I., doctor of medicine, professor, head of the department. Professors: Doctor of Medicine Bachynska O.V., Doctor of Medicine. A. I. Savchuk, Doctor of Medicine. K.O. Talalaev, Doctor of Medicine. Haidey V.R. Associate professors: Servetskyi S.K., Fedorenko T.V. Assistants: T.V. Gerasimenko, G.M. Jurtubaeva, O.A. Melnyk, K.S. Hrytsenko, L.V. Kostolonova, M.O. Makarenko.
Contact Information	Help by phone: Melnyk O.A., phone - 0965920621, responsible for organizational and educational work of the department phone Gavrushko T.G., laboratory assistant of the department; phone number - 0681241260 Email: olena.kozishkurt@onmedu.edu.ua Face-to-face consultations: from 2:00 p.m. to 5:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday Online consultations: from 4:00 p.m. to 6:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday. The link to the online consultation is provided to each group during the time classes separately.

COMMUNICATION

Classes are held at the department, according to the schedule.
 Communication with applicants will be conducted in the classroom (face-to-face).
 During distance learning, communication is carried out through the Microsoft Teams platform, as well as through e-mail correspondence, Viber messengers (through groups created in Viber for each group, separately through the head of the group).

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ABSTRACT OF THE EDUCATIONAL DISCIPLINE

The subject of study of the discipline: the specifics of scientific research, the study of the terminology and methodology of modern science, the application of the acquired knowledge in practice in educational and research processes. The subject is those elements of research, connections that are subject to study in a specific work (scientific, course, diploma, master's, etc.). The discipline focuses on the choice of methods and tools of scientific research, compliance with the principles of academic integrity.

Prerequisites and post-requisites of the discipline (place of the discipline in the educational program):

Prerequisites: Ukrainian language (by professional direction), foreign language (by professional direction), Latin language and medical terminology, medical biology, medical and biological physics, biological and bioorganic chemistry, human anatomy, histology, cytology and embryology, physiology, microbiology, virology and immunology, life safety; basics of bioethics and biosafety, pathomorphology, pathophysiology, pharmacology, propaedeutics of pediatrics, medical psychology, otorhinolaryngology, ophthalmology, neurology, psychiatry, narcology, dermatology, venereology.

Post-requisites: pediatrics, internal medicine, surgery, obstetrics and gynecology, infectious diseases, epidemiology and principles of evidence-based medicine, oncology and radiation medicine, traumatology and orthopedics, pathophysiology, anesthesiology and intensive care, emergency and emergency medical care, hygiene and ecology, palliative and hospice medicine, general practice (family medicine).

The goal of the discipline: there is the formation of a system of methodological knowledge, abilities and skills in the field of organization and conducting of scientific research in the health care system.

Tasks of the discipline: information provision of scientific research; systematization of scientific research results; implementation of scientific research into practice and determination of the effectiveness of implementation results. Acquaintance with the basics of knowledge of methodology, methods and concepts of scientific research. The formation of practical skills and the ability to apply the methodology of scientific methods, as well as the development of projects and programs for conducting scientific research. Education of moral qualities and ethical norms in the process of scientific research. Ability to summarize research materials.

Expected learning outcomes.

As a result of studying the academic discipline, the applicant must:

Know:

- methodological foundations and criteria for choosing the main adequate methods of analysis

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to test scientific hypotheses;

- theoretical and methodical bases of analysis of statistical results, their evaluation and description in order to form reasonable conclusions
- standard procedures for processing medical information
- to be able to observe and analyze social phenomena, to study and summarize research results;
- to determine the actual research problem, its goals and tasks;
- formulate a hypothesis;
- conduct a scientific experiment;
- process and interpret the results of the conducted research;

Be able:

- conducting scientific research;
- processing and analysis of received scientific results;
- formulate reasonable conclusions;

DESCRIPTION OF THE EDUCATIONAL DISCIPLINE

The discipline will be taught in the form of practical (30 classroom hours); organization of the applicant's independent work (60 hours).

Teaching methods. Verbal methods: lecture, conversation, story, explanation, work with literature. Visual methods: illustration, demonstration, observation. Practical methods: situational tasks, independent work, search and research work. Interactive methods: discussion, work in small groups, brainstorming, case method, business game. Forms of research work for applicants - essays, course and diploma theses; in-depth study of certain scientific problems in scientific circles; participation in scientific conferences of various levels;

Content of the academic discipline

Topic 1. Science and its role in society

Definition of science, classification of sciences, main features of modern science, history of the development of science. The main approaches to defining the concepts of "science", "scientific knowledge". Distinguishing features of science. Science as a system. The process of development of science. The goal and task of science. Subject and object of science.

Topic 2. Scientific information: search, accumulation, processing. Planning of research work.

Definition of the terms "information" and "scientific information". Basic requirements for scientific information. Sources of scientific information and their classification on various grounds. Information flows. Working with information sources. Peculiarities of working with the book. Formulation of the topic of scientific research. Criteria related to the topic of scientific research. Statement of the research problem, its stages. Determination of the purpose and objectives of the research. Planning of scientific research. Interpretation of the main ones

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concepts Plan and its types. Analysis of theoretical and experimental research.
Topic 3. Scientific research and its stages. General requirements for scientific and research work.

The goals and tasks of scientific research, their classification on various grounds. Basic requirements for scientific research. Forms and methods of scientific research. The theoretical level of research and its main elements. Experimental level of research and its features. Stages of scientific and research work.

Topic 4. Methodology of scientific research:

The main stages of scientific research. The choice of the topic of scientific research by the applicant, factors determining the choice. Object and subject of research, determination of its purpose and tasks.

Topic 5. Basics of preparing a scientific publication.

The structure of scientific work (purpose, scope and methods, results of own research, conclusions). Peculiarities of design of scientific works (presentation of data in tables, graphic images).

Topic 6. Implementation of scientific research and its effectiveness in medicine.

The process of implementing scientific research and its stages. Effectiveness of scientific research. The main types of effectiveness of scientific research in medicine. Evaluation of research effectiveness.

Topic 7. Language requirements and design of scientific papers.

Functional styles of modern Ukrainian literary language (colloquial, official-business, journalistic, scientific). Linguistic (lexical, grammatical, stylistic) features of scientific style.

Topic 8. Methodological principles of determining the level of science in different countries of the world and in Ukraine.

At the turn of the century, the level of development of national systems of "science and technology" became one of the main factors that have a huge impact on the social and economic development of the countries of the world, their role and place in the world economy.

Topic 9. Statistical methods used to evaluate the results of scientific research.

Selective observation as a source of statistical information. Estimation of the probability of difference: Student's t-test, calculation method, its evaluation. Peculiarities of use on small samples. Student table. Statistical hypothesis testing for independent samples. Analysis of qualitative features. Conjugation tables. Chi-square criterion, its evaluation and practical application.

Topic 10. Structure and design of an essay, thesis.

Definition of the concepts "abstract", "diploma". The structure of educational and scientific work. Writing the text of a scientific paper. Methods of processing the content of scientific texts. Conceptual and terminological support of the study. Designing the results of scientific work. Order of formation

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text

Topic 11. Design of scientific research.

Modern concept of epidemiology. Classification of epidemiological studies. Comparative characteristics of various types of research, assessment of the level of evidence of their results.

Topic 12. Criteria for evaluating the quality of research and its legal support.

Research quality criteria. Rights and responsibilities of the scientific supervisor. Peer review of research works. Report on work. Compilation of abstracts of the report. Preparation of scientific materials for publication in the press.

Topic 13. Documentary sources. Organization of reference and information activities.

Documentary sources of information. Information and search systems: definition, history of development.

Topic 14. Fundamentals of scientific ethics and work organization.

Ethical principles of scientific activity. Basics of organization of scientific work.

Plagiarism and anti-plagiarism.

Topic 15. Development of an innovative project.

The main component of the integral result of innovative activity of the Ukrainian Medical University is the results of scientific research and innovative activity. The organization and conduct of tenders is carried out by the tender commission created by the customer for the organization and conduct of tenders for the implementation of the National Development Program.

List of recommended literature:

Main:

1. Kravchun P.G., Babazhan V.D., Myasoedov V.V. [Text]: Textbook for students of higher educational institutions / Kharkiv, KhNMU, 2020. – 236 p.

Additional:

1. McEnery T. Corpus Linguistics / Tony McEnery, Andrew Wilson. – Edinburgh: Edinburgh University Press, 1996. (<http://www.lancs.ac.uk/fss/courses/ling/corpus/>).

Petrushina TO Perception of domestic science and scientists in the public mind. Visn. Nac. Akad. Nauk Ukr. 2015. (2):29.

2. Petrushyna T. Perception of domestic science and scientists in public consciousness. Bulletin of the National Academy of Sciences of Ukraine. 2015. No. 2. P. 29—36.

3. Bourdieu P. Science of Science and Reflexivity. (University of Chicago Press, 2004).

4. Petrushyna T., Soboleva N., Chepurko G. Public opinion regarding the role of science in Ukrainian society. Sociology: theory, methods, marketing. 2016. No. 2. P. 81—101.

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5. Popovich O., Bulkin I. So how do we deal with science?<http://commons.com.ua/ru/neveselye-strochki/>
Popovych O., Bulkin I. So how can we be with science?<http://commons.com.ua/ru/neveselye-strochki/>
8. Dikusar AI, Kuzhba R. Comparative analysis of the relationship between science and socio-economic development of society in the EU and CIS countries. Science and Science of Science. 2015. (2): 51.

Electronic information resources

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

EVALUATION

Forms and methods of current control: oral (survey), practical (solving clinical situational problems, practicing skills of working with regulatory documents, preventive work,

Current evaluation criteria in practical training

Perfectly "5"	It is presented to the applicant when he shows deep, solid and systematic knowledge in the scope of the curriculum, answers all questions without mistakes, reasonably formulates conclusions, using materials presented for independent work of the applicant, competently and consistently, with knowledge of the methodology, completed practical work ; using scientific terms correctly and concept.
Fine "4"	The acquirer reveals the main content of the educational material; gives incomplete definitions of concepts; allows inaccuracies when using scientific terms, vaguely formulates conclusions, performed practical work, but made minor mistakes during the research.
Satisfactorily	The acquirer reproduces the main educational material, but with

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"3"	makes significant mistakes in his presentation, gives simple examples, definitions of concepts are insufficient, characterizes general issues of social medicine.
Unsatisfactorily "2"	The applicant discloses the content of the educational material fragmentarily, makes gross mistakes in the definition of concepts and when using terminology, did not complete the practical work.

Forms and methods of final control: Credit is awarded to an applicant who has completed all sections of the educational program of the elective discipline, has actively participated in seminars, has a current grade point average of at least 3.0, and has no academic debt.

The possibility and conditions of obtaining additional (bonus) points: not provided.

**INDEPENDENT WORK OF HIGHER EDUCATION
ACQUIRES**

Independent work involves preparation for each practical session.

EDUCATIONAL DISCIPLINE POLICY

Deadlines and Rescheduling Policy:

- Absences of classes for non-respectable reasons will be worked out according to the schedule of the teacher on duty.
- skips with respectable reasons working out by individual schedule with the permission of the dean's office.

Academic Integrity Policy:

Observance of academic integrity by applicants is mandatory, and exactly:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Unacceptable in educational activities for participants of the educational process are:

- the use of family or official ties to obtain a positive or higher grade during any form of control of academic performance or academic merit;

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- use of prohibited auxiliary materials or technical means (cheat sheets, notes, micro-earphones, telephones, smartphones, tablets, etc.) during control measures;
- going through procedures for monitoring the results of training by fake persons. For violation of academic integrity, students may be held to the following academic responsibility:
- a decrease in the results of assessment of the control work, assessment in class, credit, etc.;
- retaking the assessment (test, credit, etc.);
- assignment of additional control measures (additional individual tasks, control works, tests, etc.);
- conducting an additional inspection of other works authored by the violator.

Attendance and Tardiness Policy:

Uniform: a medical gown that completely covers the outer clothing, or medical pajamas, a cap, a mask, and a change of shoes.

Equipment: notebook, pen, phonendoscope.

State of health: applicants suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

A student who is late for class can attend it, but if the teacher has put "nb" in the journal, he must complete it in the general order.

Use of mobile devices:

Mobile devices may be used by students with the permission of the instructor if they are needed for the assignment.

Behavior in the audience:

The behavior of applicants and teachers in the classrooms should be working and calm, strictly comply with the rules established Provisions on academic integrity and ethics of academic relations in Odesa National Medical University, in accordance with of the Code of academic ethics and relations of the Odesa university community National Medical University, Provisions on prevention and detection of academic plagiarism in research and educational work students of higher education, scientists and teachers of Odesa National University medical university