

SYLLABUS

INTERNATIONAL EUROPEAN
UNIVERSITY



**SCHOOL OF
MEDICINE**

**Social medicine, organization and
economics of health care**

2021



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Discipline

 Social medicine, organization and economics of health care

Lecturer


 Ph.D. Katerina KOPACH

Lecturer's profile



Consultations (full-time, online)

On-campus consultations

 Tuesday 15.30-17.00 of the first and third week of the month.

Online consultations

 Thursday 15.30-17.00 of the second and fourth week of the month.

Contact number

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E-mail



Discipline page



Form of final control	Final test	Diff.credit	Exam
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1 Description of the academic discipline (summary)

The discipline " Social medicine, organization and economics of health care " involves mastering:

- Biostatistics, which provides for the definition and analysis of major biostatistical indicators and criteria on the principles of evidence-based medicine;
- Public health statistics on the basis of analysis of a complex of medical indices: demographic, morbidity, disability, physical development;

2 Pre-requisites and post-requisites of the academic discipline (interdisciplinary links)

Pre-requisites. The discipline is based on the study by students of the following disciplines: microbiology, virology and immunology; pathomorphology; pathophysiology; pharmacology; hygiene and ecology; propaedeutics of internal medicine, propaedeutics of pediatrics; general surgery.

Post-requisites. The knowledge, skills and abilities acquired after the completion of the study of this discipline are required for the study of such clinical disciplines as internal medicine, surgery, pediatrics, obstetrics and gynecology.

Also, this knowledge, skills and abilities are necessary for future doctors to form a preventive direction of their activities of doctors, taking into account the possible impact on the health of the population of factors of different origins, risk assessment in developing comprehensive medical and social measures in cooperation with public health; for the organization of medical and diagnostic process, as well as assessment of its scope and quality; to study the legal and organizational principles of health care.

3 The aim and tasks of the academic discipline

The aim of studying the academic discipline is mastering the necessary knowledge, skills and acquisition of competencies in research, analysis and evaluation of public health indicators, organization, resources and activities of the health care system, development of evidence-based medicine recommendations for prevention and elimination of harmful effects on health and to improve the organization of medical care and public health; formation of economic worldview and basic competency characteristics for the methodology of economic analysis of medical institutions in modern conditions.

The main tasks of studying the discipline " Social medicine, organization and economics of health care " are:

- mastering the theoretical foundations of biostatistics; mastering modern principles of evidence-based medicine;
- acquaintance with methods of definition and analysis of the basic biostatistical indicators and criteria;
- mastering the methodological and theoretical foundations of the formation of statistical aggregates for their further adequate analysis; mastering the methods of determining, analyzing and evaluating the main indicators of population health according to individual criteria and in relation to the factors that affect it;
- mastering the patterns and features of population health formation;
- mastering the principles of developing measures to preserve and strengthen the health of the population and its individual contingents;
- mastering the theoretical foundations and legal foundations of the health care system, its functions and strategic directions of development.



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Learning outcomes of the academic discipline

Upon completion of the course, students should know:

- basics of statistical conclusion, data preparation methods, basic biostatistics and statistical data analysis; basic accounting documents for studying the indicators of public health (demographic, morbidity, disability), the activities of major health care institutions;
- determination of health indicators, activity of health care institutions with the use of appropriate statistical methods mastered in the study of biostatistics;
- determination of the doctor's tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents;
- assessment of the quality of medical care;
- development of management decisions aimed at improving the health of the population and optimizing health care. basic strategic and tactical plans of economic development of the medical institution;
- definition of marketing strategy which will provide the maximum satisfaction of needs of the population in medical care;
- determination of the pricing policy aimed at the implementation of strategic and operational objectives of the medical institution;
- development of a business plan for business activities in the health care system;
- basic principles of determining the insurance premium for voluntary health insurance;
- principles for determining the optimal method of payment for health care providers;
- stages of economic analysis of medical institutions and enterprises.

Upon completion of the course "Social Medicine, Public Health", students must be able to:

- Analyze and assess the health of the population.
- Analyze and evaluate government, social and medical information using standard approaches and computer information technology.
- Assess the impact of adverse factors on the health of the population (individual, family, population) in a medical institution by standard methods, assess the risk.
- Identify public health priorities, conduct needs assessments, propose science-based measures, and develop appropriate strategies.
- Plan disease prevention measures among the population to prevent the spread of disease.
- Provide advocacy, communication, and social mobilization in public health using a variety of communication channels and techniques.
- Analyze and evaluate the activities of the health care system, its regulatory, financial, staffing.
- Conduct statistical, economic and financial analysis of the effectiveness of health care facilities.
- Develop and plan management decisions aimed at improving the performance of health facilities.
- Organize the provision of medical services, ensure control over the quality of services provided at the appropriate level.
- Make strategic and tactical plans for the economic development of the medical institution.
- Build business projects in the field of health care.
- Form goals and determine the structure of personal activities based on the results of the analysis of certain social and personal needs.



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ECTS credits

In the 3rd year, the discipline includes 3 credits, 1 sections, and an credit after studying the discipline. Total number of hours 90.

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The structure of the discipline

Thematic plan of practical lessons on modules and substantive modules indicating the main issues, which are considered at the practical lessons

3rd year

Section 1. Biostatistics

Topic title	Number of hours
1. Social medicine and public health as a science. Biostatistics as a methodological basis for the analysis and assessment of public health and health protection systems. Organization and planning of statistical studies. Social medicine and public health as a science. Methods of social medicine. Definitions of "medical statistics", "biostatistics", "evidence-based medicine", "clinical epidemiology". The purpose of statistical methods in medicine. Planning a statistical study depending on the hypothesis. Scientific hypotheses.	2
2. Compilation of programs of statistical research. Organization and planning of statistical surveys. Plan and program of statistical research. The purpose of the study, the objectives of the study. Subject and object of research, unit of observation. Object and unit of research. Determining the sample size. Research findings. Summary of data. Layout of statistical tables. Data types: quantitative, qualitative, categorical. Sources of information: primary and secondary.	2
3. Relative values. The concept of statistical indicators, their types, form of presentation. Absolute data, relative values, their practical significance in medicine and health care. Types of relative values (intensive, special indicators of intensity, extensive, relative intensity, ratio, clarity), methods of their calculation and methodological bases of application for data analysis. application of relative values.	2
4. Graphical analysis methods. Graphic methods of data analysis. Types of diagrams (linear, bar, intra-bar, sector, radial, cartograms and card diagrams), the rules of their construction. Graphic representation in descriptive statistics: histograms, scale diagram (box or "box with a mustache"). Modern methods of graphic representation: infographics, dashboard, animation of diagrams, interactive diagrams.	2
5. Variation series. Average values. Descriptive statistics. Average values in clinical and epidemiological studies, their practical significance. Elements and characteristics of variation series. Average values: their types, calculation methods, features of use. The concept of variation, its meaning. Assessment of the normality of the distribution, "jumping" options. Variability of population parameters, estimation methods.	



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The structure of the discipline

Topic title	Number of hours
Absolute indicators of variation (amplitude, standard deviation) and relative indicators of variation (coefficients of variation and determination), their estimation. Measures of variation, the concept of distribution laws, their types, characteristics. The rule of "three sigma", its practical use.	2
6. Standardization method. Problems of comparing statistical indicators in inhomogeneous aggregates. Types of standardization method: direct, indirect, reverse. Characteristics of the stages of the direct method of standardization. Calculation of expected results. Formation of conclusions when applying the method of standardization.	2
7. Parametric methods for estimating probability. Probability of research results. Test of statistical hypotheses. The null hypothesis. The basis for the choice of methods of parametric statistics. Normal distribution. Student's criterion for dependent and independent populations. Method of calculation, evaluation of the indicator. Features of use on small samples. Student's table. Confidence interval. ANOVA analysis of variance. Dependence of response on the level of the factor. Comparison of relative values: Chi-square.	2
8. Nonparametric methods for estimating probability. The basis for choosing methods of nonparametric statistics. Difference criteria for independent samples; distinction criteria for dependent samples; assessment of the degree of dependence between variables. Dependent and independent sets. Criterion of signs. Mann-Whitney test. The Kruskal-Wallis method, the Wilcoxon pair test, the Kolmogorov-Smirnov test, the Fisher test, and the McNamara test.	2
9. Correlation and regression analysis. Dependence between signs: functional, correlation. Strength and direction of communication. Pair correlation coefficients. Multiple correlation coefficient. Purpose and method of calculation of Pearson's linear correlation coefficient, its estimation. Purpose and method of calculating Spearman's rank correlation coefficient. Kendall correlation coefficient. Regression analysis. Regression coefficients. Regression equation.	2
10-11. Time series and their analysis. Basic rules of construction and analysis of time series in the study of the dynamics of medical and biological phenomena. Levels of a number. Types of time series: simple and complex, interval and instantaneous. The main indicators of the analysis of time series: absolute increase, growth / decrease rate, growth rate. The main techniques of processing the time series in order to determine the trend. Methods of alignment of time series: least squares; variable average, averaging on the left and right side; increase intervals. Forecasting based on extrapolation of time series.	2
12. Epidemiological study design: case-control, cohort, randomized clinical trials. The structure of the epidemiological method: descriptive, analytical, experiment, forecasting. Design of epidemiological studies: case-control, cohort. Randomized and non-randomized trials. Factors influencing the sample size. Choice of sampling method. Deterministic and probabilistic samples. Repeated and unique sampling. Retrospective and prospective studies. Cross-sectional studies. Longitudinal studies.	2



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The structure of the discipline

Topic title	Number of hours
13. Risk factors. Methodology for calculating risk indicators and their assessment. Risk factors. Risk indicators: absolute, relative and additional population risk. Risk assessment: Purpose and application requirements. Chance Assessment Odds ratio indicator. Methods of calculation and evaluation of the indicator. Construction of a four-field table. Apply a confidence interval.	2
14. Screening. Methodology for assessing the sensitivity and specificity of screening tests. Test as a source of information. Test sensitivity. Specificity of the test. Prognostic and risk factors, their significance and possibilities of use. Calculation and estimation of the probability of spread. Positive (false positive) and negative (false negative) tests. Determination of indications for mass screening studies. Choosing a screening program.	2
15. Basics of preparing a scientific publication. Types of scientific works (thesis, article, methodical recommendations, monograph, textbook, dissertation). The order of presentation of scientific works: design, publication, speech, presentation. The structure of scientific work (purpose, scope and methods, results of own research, conclusions). Features of registration of scientific works (representation of data in tables, graphic images). Rules for making references to sources of information, bibliography. Scientometric bases .. Evaluation of the research question according to the FINER system.	2
16. Final control.	2
Total	32

4 course

Section 2. Public Health.

1. Public health, features and services. Principles of the public health system. Tasks and operational functions of the public health system. Public health actors. Public policy and regulation of the public health system. Functions and services. Economic action plan to promote public health. Global advances in public health. Public health indicators.	2
2-3. Public health. Assessment of the state of health and well-being of the population. The methodology of the study and assessment of factors that affect the health of the population. Targeted approaches to the definition of "health": general philosophical, individual theoretical, individual practical, population. Population health as a conditional statistical concept. Indicators of mental well-being. Indicators of social well-being. Quality of life. Population health indicators: demographic (birth rate, mortality, life expectancy); physical development; morbidity; disability. Classification of risk factors that affect health. Leading groups of factors that affect the health of the population: the level and way of life of people, the state of the environment, biological factors, availability and quality of medical care. Determinants of health. Public health strategies for maintaining good health. Methods of studying and assessing the factors that affect the health of the population. World practice for maintaining public health. Methodology of population health analysis and assessment.	2



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Структура дисципліни

Topic title	Number of hours
<p>5-6. The methodology of studying and evaluating the basic demographic indicators of the natural movement of the population. Analysis of the demographic situation. Demography as a science. Statistics and population dynamics. Population size and structure. Fertility, indicators and factors influencing fertility. Methods of studying the birth rate. Methods for determining and estimating general and special fertility rates. The order of birth registration in Ukraine. Current trends and regional features of birth rate in Ukraine and the world. Total mortality, its leading causes in different regions, individual countries and in Ukraine, gender, age and territorial features. Procedure for registration of deaths in Ukraine. The structure of causes of death. Methods of studying mortality, determination of general and special indicators, their significance and evaluation. Natural population growth. Analysis of the demographic situation in Ukraine: Types of population; average life</p>	2
<p>7-8. MThe methodology of the study and evaluation of infant mortality rates. Maternal mortality. Infant mortality (infant mortality). The value of the indicator for assessing the health of the population, the level of socio-economic well-being and development of society. Leading causes of infant mortality. Methods for determining the indicator, its dynamics in different regions of the world, individual countries and in Ukraine. The essence of the concepts of "live birth", "stillbirth", "fetal death". Calculation methods: by WHO, Rats. Procedure for registration of infant (infant) mortality. Methods for determining the indicators of general, neonatal, early neonatal, late neonatal, postneonatal infant mortality. Estimation of the ratio of infant mortality and neonatal mortality. Perinatal mortality. Leading causes of infant mortality at different ages of the first year of life. The main groups of factors influencing the formation of infant mortality rates (biological, environmental, medical and organizational, lifestyle).</p>	2
<p>9-10. The methodology of the study and evaluation of indicators of general morbidity. The concept of "population morbidity", its place in the complex of medical indicators of population health. Methods of studying morbidity: on requests for medical care; method according to medical examinations, according to the causes of death, according to special sample studies; population surveys. Advantages and disadvantages of each method. Morbidity rates in Ukraine and the world. Morbidity by special types of accounting: general, primary, hospital. Indicators of pathological lesions. Units of morbidity study. Sources of information on the study of morbidity: accounting and reporting medical documentation. Ecology of diseases. Spatial analysis of morbidity. Medical geography, biomedical model of health. Geography of health, socioecological model of health. Incidence and prevalence.</p>	2
<p>11-12. The methodology of the study and evaluation of indicators of non-infectious morbidity of the most important socially significant diseases. Medico-social significance of NCD study. Analysis of the prevalence of cardiovascular diseases and their structure in Ukraine and the world. Analysis of the prevalence of cancer and its structure in Ukraine and the world. Analysis of the prevalence of diabetes. Analysis of the prevalence of mental illness in Ukraine and the world. Strategies to reduce the frequency of NCDs.</p>	



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Структура дисципліни

Topic title	Number of hours
Functions of public health centers and health care systems in noncommunicable disease prevention strategies. Components of lifestyle (level, quality, style, structure), their impact on the spread of socially significant infectious diseases. Acculturation, deculturation of society, their impact on the spread of socially significant infectious diseases.	2
13. The methodology of studying and evaluating the indicators of infectious morbidity by the most important socially significant diseases. Epidemiological aspects of socially significant infections. Vaccine-controlled infections. National vaccination calendar. Study of seasonal fluctuations of infectious diseases. Quarantine diseases. Medical and social significance of studying the prevalence of tuberculosis in Ukraine and ways to prevent it. Medico-social significance of studying the prevalence of HIV infection. Medico-social significance of studying the prevalence of viral hepatitis. Drug addiction as a driving force of the epidemic of socially significant infectious diseases. Priority issues for public health centers in relation to certain infectious diseases.	2
14. Medical and social aspects of morbidity with temporary and permanent disability. Calculation methodology and analysis of indicators. Efficiency. Types of disability: temporary (full, partial) and permanent (reverse and permanent). Causes of disability. Indicators of morbidity with temporary disability: number of days, number of cases, average duration of one case, structure of cases. Medico-social significance of morbidity with temporary disability. Occupational diseases in the structure of morbidity with temporary disability, connection with working conditions, their prevention. Groups of frequent and long-term patients in enterprises. Invalidity. Types of disability. Indicators of disability. Disability of the population. The structure of the causes of disability. The structure of the contingents of the disabled. International classification of functioning, limitations of vital activity and health. International classification of functioning, limitations of life and health of children and adolescents.	2
15. Methodological basis for the study of the burden of disease. The implications of the results for the public health system. Leading health risk factors for developing countries and economically developed countries. The structure of risk factors that make up the "global burden of disease". STEPS methodology studies the prevalence of risk factors among the population. Nutritional risks. Risks associated with drinking water. Methodology for calculating the global burden of disease. Methodology for calculating the DALE indicator. Lost years of life. Global trends in the leading causes of death of women and men.	2
16. Prevention Health promotion. Types, forms and methods. Primary, secondary and tertiary prevention. Health promotion as a preventive activity of the health care system. International health care prevention programs. Prevention of socially dangerous infectious diseases. Prevention of socially significant non-communicable diseases. Targeted prevention programs to combat socially significant diseases: coronary heart disease, hypertension, diabetes, tuberculosis, malignant neoplasms. Screening programs for early detection of diseases. Public health actions and services to promote the health of the whole population or for groups at increased risk of adverse health effects.	



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6 Структура дисципліни

Topic title	Number of hours
The role of intersectoral cooperation in improving the efficiency and effectiveness of preventive measures. Methods and means of medical and hygienic training and education of the population, their features in different health care institutions. Defining target audiences.	2
17. Outreach activities (advocacy) as part of medical prevention. Three principles of health promotion: literacy of the population; safe living environment; priority of public health in all policies. Social lobbying, or advocacy. Advocacy targets. Advocacy company plan. Information campaigns. Tasks and content of the work of public health centers, their structural units, interaction with other health care institutions. Development of preventive strategies to protect and promote health, reduce the negative impact of determinants of public health. Prevention programs and strategies for disease prevention. The role of WHO in shaping public health policy.	2
18. Communication and social mobilization for health. Press releases and media relations. Types of communication: Interpersonal, group, mass. The importance of communication in maintaining and promoting health. Forms of communication. Communication channels: verbal and nonverbal. Methodology for preparing and conducting communications within the public health system. The importance of public relations and the media. Problems and possible errors of communication measures. A public health press release is an important form of communicating medical information to the general public: rules of compilation and use. The role of public organizations and public figures in the public health system.	2
19. Informatization of public health. Medical information systems in the world and in Ukraine. Information technology in the global health system. WHO ERB Database Family "Health for All" (WHO). European Environment and Health Information System (ENHIS). Medical information systems: storage of information, fast access to information, exchange of information, statistical analysis of consolidated data, reduction of staff time and reduction of errors. Terminological standards and rubricators. Comprehensive automation of medical institutions. Electronic document management. Electronic patient card.	2
20. Final control	2
Total	40

7 Signs of discipline

Term of teaching	Semester	International disciplinary integration	Course (year of study)	Cycles: general training / vocational training / free choice
1 semester	VI, VII	Yes	3,4	General training / vocational training



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Evaluation system and requirements

General system of discipline assessment

Current control: tests, surveys, interviews, testing, reports, speeches, reports, solving situational problems.

Current control is carried out at each practical lesson in accordance with the specific objectives of the topic in order to check the degree and quality of learning the material being studied and during the individual work of the teacher with the student for those topics that the student develops independently and they do not belong to the structure of the practical lesson. All practical classes use objective control of theoretical training and the acquisition of practical skills in order to check the readiness of the student for the lesson. In the process of current control, the student's independent work is evaluated on the completeness of tasks, the level of learning materials, mastering practical skills of analytical, research work, etc.

Assessment of current activities: The student is graded on a scale within the number of points specified for the topic.

The maximum and minimum number of points that a student can receive for studying the current topic, calculated depending on the number of topics. The points obtained by the student on the cumulative principle are added within the content sections.

The average score for the current activity is converted into points on a 200-point scale, according to the recalculation table. The student must receive a grade for each topic.

The final control is carried out upon completion of all topics in the last test.

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Conditions of admission to the final control

Students who have attended all the curricula provided by the curriculum in the discipline, and during the study of the section scored no less than the minimum. A student who, for good reason, has missed classes, is adjusted to the individual curriculum and is allowed to work off academic debt by a certain deadline. For students who missed classes without good reason, the decision to complete them is made individually by the director of the institute.

Forms of final control should be standardized and include control of theoretical and practical training. The maximum number of points that can get an applicant in the discipline - 200. The minimum number of points that must be obtained by the applicant - 120.

QR Code: <https://ie.u.edu.ua/docs/rate-of-study.pdf>

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Discipline policy

To achieve the goals of training and successfully complete the course, it is necessary from the first day to join the work, regularly attend lectures, read the material beforehand, before its consideration in practice, do not be late and do not miss classes, come to the department dressed in a medical gown, have changeable shoes, have a notebook, a pen, perform all the necessary tasks and work every day, be able to work with a partner or in a group, ask for help and get it when you need it.



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Discipline policy

For students:

- inadmissible use of a mobile phone, tablet or other mobile devices during classes, copying and plagiarism;
- absences from practical classes are not allowed;
- the study of the discipline is based on collegiality, cooperation and solidarity of the teacher and students;
- students' scientific, exploratory and research work is welcome;
- writing essays on the list of topics of elective tasks is desirable and mandatory if the student wants to improve their assessment;
- topics of the discipline are considered in terms of their practical application and bioethical capacity;
- in classes to be in medical gowns.

For teachers:

- implementation of the curriculum is mandatory;
- delays in lectures, practical (seminar)
- discipline policy provides for objective assessment of knowledge;
- any manifestations of corruption are prohibited;
- pay special attention to students in practical classes during work with medical equipment, instruments,
- prejudice and discrimination regardless of race, ethnicity and religion.

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Policy on skipping classes and performance of tasks later than the set deadline

A student who, for valid reasons, is not documented, was not subject to the current control of the masses, has the right to pass the current control within two weeks after returning to study.

A student who was absent from classes without good reason, did not eliminate the academic debt, is not allowed to the final semester control of knowledge in this discipline, and on the day of the test in the statement of the research and teaching staff is graded "not allowed".

Re-examination of the discipline is appointed subject to the implementation of all types of educational, independent (individual) work provided by the working curriculum of the discipline and is carried out in accordance with the approved by the directorate schedule of liquidation of academic debt.

QR Code: <https://ieu.edu.ua/docs/050.pdf>

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Policy of academic integrity

Participants in the educational process are guided by the principles of academic integrity

QR Code: <https://ieu.edu.ua/docs/011.pdf>



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Recommended Literature

Basic:

1. Oxford Textbook of Global Public Health, 6 edition. Edited by Roges Detels, Martin Gulliford, Quarraisha Abdool Karim and Chorh Chuan Tan. – Oxford University Press, 2017. – 1728 p.
2. Medical Statistics at a Glance Text and Workbook. Aviva Petria, Caroline Sabin. – WileyBlackwell, 2013. – 288 p.

Additional:

1. Board Review in Preventive Medicine and Public Health. Gregory Schwaid. - ELSEVIER., 2017. – 450 p.
2. Donaldson`s Essential Public Health, Fourth Edition. Liam J. Donaldson, Paul Rutter – CRC Press, Taylor&Francis Group, 2017 – 374 p.
3. Jekel`s epidemiology, biostatistics, preventive medicine and public health. Fourth edition. David
4. L. Katz, Joann G. Elmore, Dorothea M.G. Wild, Sean C. Lucan. – ELSEVIER., 2014. – 405 p.
5. Oxford Handbook of Public Health Practice, Fourth Edition. Charles Guest, Walter Ricciardi, Ichiro Kawachi, Iain Lang. – Oxford University Press, 2012. – 656 p.
6. Primer of Biostatistics, Seventh Edition. Stanton A. Glantz – McGraw-HillEducation, 2012. – 320 p.
7. Health economics: textbook. – Vinnytsia: Nova Knyga, 2010. – 112 p.

Information resources:

1. World Health Organization - <https://www.who.int>
2. European Health for All database- <http://www.euro.who.int/en/home>
3. Cochrane Center for Evidence-Based Medicine - <https://www.cochrane.org/news/cochranelaunches-cochrane-evidence-essentials-introduction-evidence-based-medicine>
4. Cochrane Library - <https://www.cochranelibrary.com/?cookiesEnabled>
5. US National Library of Medicine – MEDLINE <https://www.ncbi.nlm.nih.gov/pubmed>
6. Center for Disease Control and Prevention - <https://www.cdc.gov/>
7. British Medical Journal www.bmj.com
8. Evidence-Based Medicine www.evidence-basedmedicine.com
9. Improving Intergovernmental Fiscal Relations in Ukraine, 2008
// <http://go.worldbank.org/6C56QH4A70>
10. The Ukrainian health financing system and options for reform / By Valeria Lekhan, Volodymyr Rudyi, Sergey Shishkin: Health Systems Financing Programme WHO Regional Office for Europe, 2007. — 33 p. // <http://www.euro.who.int/document/e90754.pdf>

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Tips for successful learning in the course

If you want to be successful in this discipline, you must be a student who:

- persistent and anti-lazy,
- attentive and inquisitive,
- stress-resistant and with a sense of humor,
- creative and cheerful!

Therefore, I wish you all perseverance, determination and optimism, and then success will come by itself! See you!