

MINISTRY OF HEALTH OF UKRAINE
KHARKIV NATIONAL MEDICAL UNIVERSITY

Department Epidemiology

Academician year 2021 - 2022

SYLLABUS
EDUCATIONAL DISCIPLINE
BIOSTATISTICS AND CLINICAL EPIDEMIOLOGY

Normative or selective educational component – selective

The form of education is full-time

Branch of knowledge 22 «Healthcare»

Specialty 221 «Dentistry»

Educational - professional program the second (master's) level of higher education

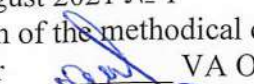
Course 4

The syllabus of the discipline was approved at
a meeting of the Department of Epidemiology

Protocol from
“27” August 2020 № 23

Head department,
prof.  T.O. Chumachenko

Approved by the methodical commission of
KhNMU on problems of the prophylactic
medicine

Protocol from
“27” August 2021 № 1
Chairman of the methodical commission,
Professor  VA Ogniev

Developers:

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INFORMATION ABOUT TEACHERS TEACHING THE EDUCATIONAL COMPONENT

Teacher: Dr. med. .n, professor, head of the department of epidemiology Chumachenko Tetyana Oleksandrivna

Information about the teacher (s) professional interests - epidemiology, molecular epidemiology, public health. Trajectory of professional development: graduated from Kyiv Medical Institute, 1983; specialty - "Hygiene, sanitation, epidemiology", MD. Ph.D., specialty 14.02.02 - epidemiology, doctoral dissertation topic "Immunoepidemiological monitoring of the population in the system of epidemiological surveillance of infections controlled by immunoprophylaxis, Professor (2012). He has a master's degree in higher school pedagogy, a qualification of a teacher of universities and higher educational institutions. He has the highest qualification category in the specialty "epidemiology". Constantly improves his skills, including foreign internships. Actively engaged in scientific activities, is a recognized scientist both in KhNMU and among the world medical community. Organizes and coordinates international research projects on the strategy of containment of antibiotic resistance, prevention of infections related to medical care, mathematical modeling of epidemic processes of infectious and non-infectious human pathology. Constantly participates in scientific - practical conferences, symposia, congresses, including international ones, has about 500 published scientific works, 12 patents and certificates for registration of copyright to a work. Collaborates with practical health care institutions and scientists from Ukraine, Moldova, Lithuania, Georgia, the United States, and the National Public Health Agency of Sweden. Constantly improves pedagogical skills, actively involves applicants for higher education in scientific activities. In practical classes he creates a friendly, creative atmosphere, uses modern teaching methods.

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Information about consultations: face-to-face consultations: Wednesday 15.00-17.00, room Department of Epidemiology;

Location - Kharkiv, street Trinklera, 12

Discipline page in Moodle: <http://distance.knu.edu.ua/course/view.php?id=254>

Teacher Makarova Victoria Ivanovna

Information about the teacher Makarova Victoria Ivanovna, graduated from Kharkiv State Medical University in 1998 with a degree in "Medicine", underwent an internship in "Epidemiology", studied in graduate school at the Department of Epidemiology of KhNMU, since 2011 works as an assistant at the Department of Epidemiology qualification category in the specialty "Epidemiology/ She is studying for a master's degree in " Public Administration ". Actively engaged in research, is a participant in research projects with international participation, has published 83 scientific papers, has 2 utility model patents and 2 certificates of registration of copyright to the work. industrial enterprises on the prevention of infectious diseases and occupational pathology, preservation of the health of the professional team. Constantly improves their skills in re-certification cycles, thematic improvement courses, educational platforms, improves English language skills. Constantly improves pedagogical experience and pedagogical skills in master classes Creates a friendly, creative atmosphere, uses modern teaching methods in practical classes.

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Information about consultations: face-to-face consultations Friday 15.00-17.00, room_Department of Epidemiology;

Location - Kharkiv, street Trinklera, 12

Teacher assistant of the department Klyuchnyk Inna Oleksiivna

Information about the teacher Klyuchnyk Inna Oleksiivna, graduated from Kharkiv State Medical University in 1995 with a degree in Medical Prevention, passed an internship in Epidemiology, has significant practical experience in the specialty, has the highest qualification category in Epidemiology. since 2020 he has been working as an assistant at the Department of Epidemiology

of KhNMU. He has a secondary specialization in "Management and Health". Actively engaged in scientific activities, published 9 scientific papers. Cooperates with medical and preventive institutions on the implementation of programs for infection control and hand hygiene of personnel, prevention of infectious diseases. Constantly improves his skills at thematic improvement courses, educational platforms, improves the level of English language proficiency. He constantly improves his pedagogical experience and pedagogical skills at master classes, trainings and lectures. In the classes he uses modern teaching methods with an emphasis on the practical component, creates a friendly and creative atmosphere. Professional interests - epidemiology, infectious diseases, microbiology, virology, parasitology, high school pedagogy.

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Information about consultations: face-to-face consultations: Wednesday 15.00-17.00, room Department of Epidemiology;

Location - Kharkiv, street Trinklera, 12.

Teacher Raylyan Marina Vladimirovna

Information about the teacher Raylyan MV In 2006 she graduated from Kharkiv State Medical University with a degree in Medical Prevention and qualified as a physician (HA №30112199 dated June 30, 2006).

After graduating from the university she was accepted to the Ordzhonikidze district sanitary-epidemiological station in Kharkiv as an intern in epidemiology for internship, in 2007 she was transferred to the position of an epidemiologist. In Ordzhonikidze district SES she worked until 21.12.2012, from January 2013 she was transferred to the position of epidemiologist of the epidemiological surveillance department of the Kharkiv city department of the Main Department of the State Sanitary and Epidemiological Service in Kharkiv region, from 05.12.2013 she was transferred to the position of chief specialist of the department. Kharkiv City Department of the Main Department of the State Sanitary and Epidemiological Service in Kharkiv region, as the winner of the competition. On December 5, 2013, the oath of a civil servant was taken, on February 5, 2014, 13 ranks of civil servants were awarded. On 04.05.2016 she was transferred to the Kharkiv city branch of the State Institution "Kharkiv Regional Laboratory Center of the Ministry of Health of Ukraine" to the position of a doctor-epidemiologist of the department of organization of epidemiological research. Since October 24, 2016 I have been working as an assistant at the Department of Epidemiology of KhNMU. I have the first qualification category in the specialty "Epidemiology" since November 3, 2016 №428-k. I teach the following disciplines: "Epidemiology", "Internal Medicine with Epidemiology", "Clinical Epidemiology", "Military Epidemiology with Emergency Epidemiology". In 2018 she received her second higher education - Master's Diploma M 18 № 113764 National Technical University "KhPI", specialty "Educational, Pedagogical Sciences" from 21.12.2018.

I am constantly improving my skills. Professional interests: epidemiology, microbiology, infectious diseases.

Contact phone and E-mail of the teacher 068-611-42-00, email mv.railian@knmu.edu.ua

Information about consultations: face-to-face consultations: Thursday 15.00-17.00, room Department of Epidemiology;

Location - Kharkiv, street Trinklera, 12

The teacher is an assistant of the department Polyvyanna Yuliya Ivanivna

Information about the teacher Polyvyanna YI, in 2003 graduated from Kharkiv National Medical University with a degree in "medical prevention". From 2003 to 2004 on the basis of KhMAPO and Kominternovsky district SES I passed an internship on a specialty "microbiology and virology". In 2004-2009 she was accepted to the Comintern district SES as a bacteriologist. From 2009 to 2011 she worked as a bacteriologist in the bacteriological laboratory of HOPTD №1. From 2011 to 2013 she worked as a microbiologist in the laboratory of the Kharkiv Pharmaceutical Company "People's Health". From 2013 to 2014 she worked as a bacteriologist in the bacteriological laboratory of the

Regional Clinical Infectious Diseases Hospital, and from 2014 to 2015 she worked as the head of the clinical diagnostic laboratory of this medical institution. Courses: 2009 - 4-month specialization courses in bacteriology on the basis of KhMAPO; 2009 - monthly pre-certification cycle in bacteriology on the basis of KhMAPO; 2009 - assignment of the second category in bacteriology; 2014 - monthly pre-certification cycle in bacteriology on the basis of KhMAPO; 2014 - assignment of the first category in bacteriology. Polyvyanna YI is constantly improving his scientific and pedagogical skills. Received a certificate in English level C1 international standard from iTÉP Academic-Plus Exam in August 2019.

Contact phone 067-318-38-08 Email yy.polyvianna@kntmu.edu.ua

Information about consultations: face-to-face consultations: Monday 15.00-17.00, room Department of Epidemiology;

Location - Kharkiv, street Trinklera, 12

Teacher Semerenska Tetyana Ivanivna

Information about the teacher Semerenska T.I. graduated from Kharkiv National Medical University in 2009 with a degree in Medical Prevention. From 2009 to 2010 on the basis of the Kharkiv Medical Academy of Postgraduate Education and the Kharkiv Regional SES she passed an internship in the specialty "epidemiology". In 2010-2012 she was admitted to the Ordzhonikidze District Sanitary and Epidemiological Station as an epidemiologist. From 2013 to 2016 she worked as an epidemiologist at the State Institution "Kharkiv Regional Laboratory Center of the Ministry of Health of Ukraine", the department of epidemiological research of the Kharkiv city branch. Courses: 2015 - monthly internship course and thematic improvement courses "Military Hygiene" on the basis of KhMAPO; 2016 - thematic improvement "Epidemiology and prevention of infections associated with the provision of medical care" on the basis of KNTMU. Additional education: 2013 Kharkiv Humanities University "People's Ukrainian Academy", Faculty of Postgraduate Education, awarded the qualification "Translation Specialist" (English); 2020 Kharkiv National Medical University, specialty "Educational Pedagogical Sciences", was awarded the qualification "Teacher of Higher Education".

She was trained in advanced training courses for teachers of higher education "School of Young Teachers" in 2016 - 2017 on the basis of KNTMU. Semerenska T.I. constantly improves his scientific and pedagogical skills.

Contact number 068-331-83-77 Email ty.semerenskaia@kntmu.edu.ua

Information about consultations: classroom consultations: Wednesday 15.00-17.00, rooms of Department of Epidemiology;

INTRODUCTION

1. Description of the discipline

The discipline is compiled in accordance with the Standard of Higher Education of Ukraine of the second (master's) level, field of knowledge 22 "Health care", specialty 221 "Dentistry", specialization (s) - doctor.

The discipline is studied in the 4th year, the study of the discipline is aimed at forming knowledge about statistical and clinical research at the present stage of development of medical science, methodology of their organization and conduct, evaluation of results and use of these data in practice.

Types of educational activities of students according to the curriculum are: a) practical classes, b) self- work of students (ISW), c) individual tasks, in the organization of which a significant role is played by consultations of teachers. Thematic plans of practical classes, IWS and individual tasks ensure the implementation in the educational process of all topics that are part of the discipline "Biostatistics and Clinical Epidemiology". Possible types of independent work of students: preparation for practical classes and study of topics considered only in terms of independent student work, search and study of additional literature, creation of algorithms, structural and logical schemes, writing an abstract on one of the recommended topics and defending it in practice.

Course - 4

Specific semester / academic year - 7th or 8th semester 2021 - 2022 academic year

The volume of the discipline - 90 hours (3.0 ECTS credits), including 0 hours - lectures, 20 hours - practical classes, 70 hours - student self-work

The subject of study of the discipline is clinical epidemiology, evidence-based medicine.

Interdisciplinary links: discipline is based on the knowledge gained by the graduate in the study of other basic disciplines - medical biology, microbiology, virology and immunology, biostatistics, public health medicine and integrates with these disciplines;

Prerequisites: of epidemiology, medicine of Public health, health care, basics of bioethics and biosafety, mathematics, medical informatics and computer technology and integrates with these disciplines;

Postrequisites: methodology of evidence-based medicine

Link to the page of the discipline in MOODLE – it does not have

1. PURPOSE AND TASKS OF THE DISCIPLINE

1.1. The purpose of studying the discipline "Biostatistics and Clinical Epidemiology" is to form knowledge of the methodology of scientific research to optimize the process of diagnosis, treatment and prevention of diseases and make informed decisions on treatment and prevention measures.

1.2. The main objectives of the discipline "Biostatistics and Clinical Epidemiology" are:

- mastering the theoretical foundations of biostatistics;
- mastering modern principles of clinical epidemiology;
- acquaintance with methods of definition and analysis of the basic biostatistical indicators and criteria;
- mastering the methodological and theoretical foundations of clinical research

1.3. Competences and learning outcomes

According to the requirements of the standard, the discipline provides the applicant with higher education competencies:

Integral: The ability to solve complex problems and problems in the field of health care in the specialty "Stomatology" in a professional activity or in the learning process, which involves research and / or innovation and is characterized by uncertainty of conditions and requirements

general:

- GC 1. Ability to abstract thinking, analysis and synthesis; ability to learn and be modernly trained.
- GC 2. Knowledge and understanding of the subject area and understanding of the profession.
- GC 3. Ability to apply knowledge in practice.
- GC 6. Skills of using 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 11. Ability to work in a team.

GC 13 Ability to act socially responsibly and consciously.

special (professional, subject):

PC 1. Ability to collect medical information about the patient and analyze clinical data.

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

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.

1.3.2. The study of the discipline provides students with the acquisition of the following program learning outcomes:

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

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

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

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

1.3.3. The study of the discipline provides students with the following social skills (Soft skills):

active listening

ability to express one's opinion clearly

the ability to understand the feelings, needs and problems of others

ability to be a member of a team, to work for results

the ability to show respect for the contribution of others

perception of different styles of behavior

leadership skills

influence and persuasive skills

ability to determine the essence of the problem and the reasons for its occurrence

ability to find relevant information and reliable sources

the ability to formulate solutions to this problem

the ability to predict the consequences of each option for themselves and others

the ability to choose the optimal solution

ability to distinguish facts from myths, stereotypes and personal ideas

the ability to concentrate on achieving a goal

2. INFORMATION SCOPE OF THE COURSE

Name indicators	Field of knowledge, specialty, degree, OPP	Characteristics of the discipline	
		daily form of education	
Number of credits – 3,0	Branch of knowledge 22 "Health"	selective	
Total number of hours –90,0	Specialty: _221 "Dentistry" (code and name) Specialization: _____	course:	
		4th	
		Semester	
		7th/ 8th	
Hours for full-time study: classrooms - 20 self-work of the applicant - 70	<u>the second (master's) level of higher education</u> 222 «Medicine»	Lectures	
		0 hours	
		Practical classes	
		20 hours	
		Laboratory classes	
		0 hours	
		Self-work	
		70 hours	год.
Individual task:0 год.			
Final control is credit			

2.1 Content of the discipline

2.2.1 Lectures

It does not have

2.2.3

.Topics of practical classes

Practical classes	Topics of practical classes	Hours	Methods Learning	Forms control
1	Biostatistics as a basis of clinical epidemiology and evidence-based medicine. Information component of epidemiological and clinical research. The role of official statistics in the analysis of public health.	5	story-explanation, conversation, presentation, discussion,	oral examination (individual and frontal); written survey; self-control;

2	Epidemiological data. Basic principles of planning clinical trials. Statistical indicators and standardized coefficients used in epidemiological studies. Illustration of epidemiological data.	5	story-explanation, conversation, presentation, videos, discussion, modeling of processes and situations, delegation of authority, case method,	oral examination (individual and frontal); written survey; test control; mutual control; self-control; report; declamation;
3	Descriptive epidemiological research methods. Observational analytical epidemiological studies.	5	story-explanation, conversation, presentation, videos, discussion, modeling of processes and situations, delegation of authority, case method, game	oral examination (individual and frontal); written survey; test control; mutual control; self-control; report; declamation;
4	Experimental epidemiological studies. Protection of individual work. Final control	5	story-explanation, conversation, presentation, videos, discussion, modeling of processes and situations, delegation of authority, case method,	oral examination (individual and frontal); written survey; test control; mutual control; self-control; report; declamation;
Total hours of the practical classes		20		

2.2.4. Laboratory classes

It does not have

2.2.5. Self-work topics

No	Topics	hours	Methods Learning	Forms control
1	Statistical indicators and standardized coefficients used in epidemiological studies. Illustration of epidemiological data.	14	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
2.	Execution of individual independent work (presentation of the analysis of quantitative and qualitative indicators of epidemic process concerning actual human pathology)	15	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
3.	Biostatistics as a basis of clinical epidemiology and evidence-based medicine.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
4	Information component of	4	story-	oral examination

	epidemiological and clinical research. The role of official statistics in the analysis of public health.		explanation, conversation, presentation,	(individual); individual tasks; declamation;
5		5	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
6	Principles of planning epidemiological research.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
7	Epidemiological observation. Descriptive - evaluative methods. Screening. Statistical observation.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
8	Analytical methods. Retrospective and prospective research. Sample study. Study of epidemiological risk.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
9	Formation of hypotheses about the causes of morbidity, their verification.	5	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
10	Experimental epidemiological studies. natural experiment. Uncontrolled and controlled experiment. Mathematical modeling.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
11	Errors in epidemiological studies. Sources of errors. Systematic error, random error, cofounders. Ways to control errors.	4	story-explanation, conversation, presentation,	oral examination (individual); individual tasks; declamation;
14	Preparation for the test	4	consultation	test
	Total	70		

3. EVALUATION CRITERIA

3.1 Carried out in accordance with the "Instructions for the evaluation of educational activities in the European credit transfer system for the organization of the educational process (order of KhNMU from 21. 08. 2021 № 181)

Evaluation of current learning activities (CLA)

When assessing the mastery of each subject of the discipline (CLA), the applicant is graded according to the traditional 4-point system: "excellent", "good", "satisfactory" or "unsatisfactory".

The final score for the current learning activity (CLA) is defined as the arithmetic mean of traditional grades for each lesson, rounded to 2 decimal places and listed in a multi-point scale according to Table 1 (see below).

CLA is considered fulfilled if the applicant in the current semester has completed all missed classes and lectures, and the average score for all topics of the PC is 3 points or higher, in which case the statement is marked "completed" and indicates the average score in 4-point system (is calculated automatically within the functionality of the electronic journal of ACS), or "unfinished", if the

applicant in the current semester has unfinished missed classes and lectures, or an average score below 3 points.

The recalculation of the average score for CLA is carried out in accordance with table 2, as the discipline ends with a credit. The number of points that must be scored by the applicant for higher education for admission to the final test from 129 to 200 points.

The final score for the current educational activities in the semester is defined as the arithmetic mean of national grades for each lesson, rounded to 2 decimal places. Recalculation of the average grade for current educational activities in a multi-point scale is carried out in accordance with table 2. To enroll a student must receive from 120 to 200 points.

Table 2

Recalculation of the average score for current activities in a multipoint scale
(for disciplines ending with a credit)

4-point scale	200- point scale	4- point scale	200- point scale	4- point scale	200- point scale
5	200	4.22-4,23	169	3.45-3,46	138
4.97-4,99	199	4.19-4,21	168	3.42-3,44	137
4.95-4,96	198	4.17-4,18	167	3.4-3,41	136
4.92-4,94	197	4.14-4,16	166	3.37-3,39	135
4.9-4,91	196	4.12-4,13	165	3.35-3,36	134
4.87-4,89	195	4.09-4,11	164	3.32-3,34	133
4.85-4,86	194	4.07-4,08	163	3.3-3,31	132
4.82-4,84	193	4.04-4,06	162	3.27-3,29	131
4.8-4,81	192	4.02-4,03	161	3.25-3,26	130
4.77-4,79	191	3.99-4,01	160	3.22-3,24	129
4.75-4,76	190	3.97-3,98	159	3.2-3,21	128
4.72-4,74	189	3.94-3,96	158	3.17-3,19	127
4.7-4,71	188	3.92-3,93	157	3.15-3,16	126
4.67-4,69	187	3.89-3,91	156	3.12-3,14	125
4.65-4,66	186	3.87-3,88	155	3.1-3,11	124
4.62-4,64	185	3.84-3,86	154	3.07-3,09	123
4.6-4,61	184	3.82-3,83	153	3.05-3,06	122
4.57-4,59	183	3.79-3,81	152	3.02-3,04	121
4.54-4,56	182	3.77-3,78	151	3-3,01	120
4.52-4,53	181	3.74-3,76	150	Less than 3	Not enough
4.5-4,51	180	3.72-3,73	149		
4.47-4,49	179	3.7-3,71	148		
4.45-4,46	178	3.67-3,69	147		
4.42-4,44	177	3.65-3,66	146		
4.4-4,41	176	3.62-3,64	145		
4.37-4,39	175	3.6-3,61	144		
4.35-4,36	174	3.57-3,59	143		
4.32-4,34	173	3.55-3,56	142		
4.3-4,31	172	3.52-3,54	141		
4,27-4,29	171	3.5-3,51	140		
4.24-4,26	170	3.47-3,49	139		

Assessment of individual tasks

At the meeting of the department approved a list of individual tasks with the definition of the number of points for their performance, which can be added as incentives (not more than 10). Points for individual tasks are accrued once only on a commission basis (commission - head of the department, head teacher, group teacher) only if they are successfully completed and defended. The total amount of points may not exceed 200 points.

Assessment of students' self-work

Assimilation of topics that are submitted only for self-work is checked during practical classes and tests.

Grade from the discipline

The course is studied during the 1st semester. Discipline ends with a test.

Discipline assessment technology (Table 3 of the "Instructions for assessing the educational activities of students").

Assessment of the results of the study of disciplines is carried out directly during the test. The grade in the discipline is defined as the sum of scores on CLA, listed in the 200-point scale according to Table 2 and individual student tasks and is min - 120 to max - 200. Correspondence of grades on the 200-point scale, four-point (national) scale and ECTS scale is given in table 3.

Table 3

**Correspondence of estimates on a 200-point scale,
four-point (national) scale and ECTS scale**

Rating on a 200-point scale	Assessment on the ECTS scale	Score for four-point (national) scale
180–200	A	excellent
160–179	B	good
150–159	C	good
130–149	D	satisfactory
120–129	E	satisfactory
Less than 120	F, Fx	unsatisfactory

The grade in the discipline is given only to students who have completed the curriculum in the discipline in full. Grades "FX" or "F" ("unsatisfactory") are given to students who are not credited with the study of the discipline, the form of control of which is credit.

After completing the study of the discipline responsible for the organization of educational and methodical work at the department or the teacher puts the student's grade on the scales (Table 6) in the record book and fill in the progress of students in the discipline forms: U-5.03A - credit.

Elimination of academic debt (working off)

Students must complete all missed classes and unsatisfactory grades. At the same time, classes are held within one calendar month from the moment of skipping or receiving an unsatisfactory grade is carried out once without obtaining permission from the dean's office and without payment. At the end of the one-month period, classes are held in accordance with the "Regulations on the procedure for students of Kharkiv National Medical University to study," approved by the order of KhNMU from 07.12.2015 №.415;

3.3 Control questions, tasks for self-work

Section 1. Biostatistics

1. Definition of "biostatistics"
2. The main stages of development of biostatistics. Outstanding scientists and their contribution to the development of biostatistics.

3. The place and role of biostatistics in the work of the doctor.
4. The purpose of clinical and epidemiological studies and the quality of their organization.
5. Medical information.
6. Types of information services.
7. Theoretical foundations of medical statistics.
8. Medical statistics: subject, content and objectives.
9. Sections of medical statistics.
10. Sources of statistical information: accounting and reporting documentation, databases, registers and directories.
11. Using the survey method in the field of health care.
12. Types of questionnaires, their characteristics.
13. Modern approaches to the analysis and assessment of quality of life.
14. The role of official statistics in the analysis of public health, its advantages and disadvantages.
15. World Health Statistics. The role of the World Health Organization in information support.
16. European Health for All Database.

Section 2. Clinical epidemiology

1. Formation of "clinical epidemiology", goals, objectives.
2. History of the direction "scientifically substantiated (evidence) medicine".
3. Epidemiological approach to the study of human pathology. The difference between the epidemiological approach and other specific scientific approaches used in medicine to study causation.
4. Epidemiological data.
5. Basic principles of epidemiological research planning.
6. Types of epidemiological data. Collection of epidemiological data.
7. Standard case definition. Classification. The case is confirmed, probable and suspicious (possible).
8. Problems of sample research. Sample size. Sampling. epidemiological study protocol.
9. Statistical indicators and standardized coefficients used in epidemiological studies.
10. Illustration of epidemiological data.
11. Indicators of the central trend (mode, median, arithmetic mean), calculation and interpretation of discrepancy, standard deviation and confidence interval.
12. Graphical representation of data - images of manifestations of morbidity. Ways to illustrate epidemiological data.
13. Tables, construction rules.
14. Linear graphs and charts, their comparative characteristics, scope.
15. Indicators of frequency and prevalence of morbidity.
16. Calculation and interpretation of relations, proportions, coefficients, incidence, prevalence, mortality, lethality.
17. Intensity. Dynamics Територіальна характеристика.
18. Description of the structure of morbidity and identification of risk groups.
19. Formation of hypotheses about possible risk factors. Evaluation of hypotheses about the causes and conditions of diseases.
20. Cohort epidemiological studies. Longitudinal (retrospective and prospective) studies. Advantages and disadvantages of cohort research
21. Statistical processing of data obtained in cohort studies. Measurement of associations (effect of influence). Absolute, relative and attributive risk.
22. Case-control study. Stages, advantages and disadvantages. Odds ratio.
23. Sources of errors in epidemiological studies and ways to eliminate them.

24. Systematic error. Prejudice of choice. Information bias. Ways to control systematic error.
25. Accidental error. Types of random error. α -error, β -error. Ways to fix an accidental error.
26. Cofounding factor. Ways to control interfering factors.
27. Randomization.
28. Restriction.
29. Statistical modeling.
30. Stratification analysis.
31. Modification of the effect.
32. Controlled, uncontrolled and natural epidemiological experiments. Epidemiological tests. Modeling of the epidemic process.
33. Organization of a randomized controlled trial.
34. Pseudorandomization.
35. Blinding (masking) of the study: blind, double, triple and fourth blind trials.
36. Bioethical aspects of epidemiological research. Consent of participants.

3.4 Individual tasks

One of the most important ways to optimize and improve the quality of practical training of higher education seekers is to perform individual tasks, the main purpose of which is to better understand and master theoretical and practical knowledge, skills and abilities, psychological and practical training of higher education students to constantly improve their skills. professional level.

Individual tasks from the course "Methods of epidemiology in clinical medicine. Fundamentals of Evidence-Based Medicine "for applicants for higher education in the 4th year of study is the implementation of individual research tasks (IDP) in the form of an oral presentation of the results of retrospective epidemiological analysis of infectious and non-infectious diseases of a particular nosoform with derivation of manifestations and patterns of epidemics for some time by population groups and groups. Retrospective epidemiological analysis of infectious diseases consists of the following stages:

1. Analysis of the long-term dynamics of morbidity with the definition of long-term trend and cyclicity with the forecast of morbidity for the next year.
2. Analysis of the annual dynamics of morbidity with the calculation of the index and seasonality ratio.
3. Analysis of the distribution of morbidity by age groups.
4. Analysis of the distribution of morbidity in groups of the population on an occupational basis.
5. Analysis of the distribution of morbidity of the population by social groups.
6. Analysis of the distribution of morbidity by territory.
7. Analysis of the distribution of diseases by types of teams.
8. Analysis of the results of the sanitary-epidemiological service to identify sources of infection and transmission factors in patients.
9. Analysis of the work of family (district) doctors on early diagnosis of infectious diseases.
10. Analysis of the work of family (district) doctors on hospitalization of patients with infectious diseases.

Recommended topics for abstract work:

1. The main historical stages of epidemiology.
2. The John Snow study is the first epidemiological study.
3. Epidemiological study of the state of health of the population by doctors of zemstvo medicine.
4. Epidemiological study of pellagra in the first half of XX century.
5. Epidemiological study of the etiology of congenital heart disease on the example of "case-control" and "cohort" studies.
6. The first case-control studies in the United States and the United Kingdom.
7. Cohort study in Framingham.

8. History of formation of clinical epidemiology.
9. History of the formation of "evidence-based medicine".
10. Systematic reviews. Principles of their composition.
11. Meta-analysis.
12. Databases that have evidence.
13. Methods of statistical analysis used in modern evidence-based medicine.
14. Legal and ethical aspects of modern epidemiological research.
15. Graphical representation of epidemiological data.

3.5 Rules for appealing the assessment

The complaint is submitted to the person responsible for educational and methodical work or the head of the department, discussed at the meeting of the department, students are offered to pass the test before the commission, which includes the head of the department, head of the department, associate professor and / or lecturer of the academic group.

4. DISCIPLINE POLICY

Academic expectations from higher education students

Discipline requirements

It is expected that applicants for higher education will attend all practical classes and complete all sections of independent work. If they missed classes, it is necessary to work it out (according to the schedule on the information stand of the department)

Written and homework must be completed completely and on time, if the applicant has questions, you can contact the teacher in person or by e-mail, which the teacher provides in the first practical lesson.

During the practical classes, the higher education seeker and the higher education seeker are recommended to keep a synopsis of the lesson and keep a sufficient level of silence. Asking questions to the teacher is perfectly normal.

Applicants for higher education must arrive on time, not be late, in class must be dressed in a medical gown, changeable shoes and boot covers are not required, outerwear remains in the wardrobe.

The use of electronic gadgets is allowed if necessary (as a calculator or for visual presentation of information in the form of graphs and charts), but calls can be made only during a break, finding the correct answer using gadgets via the Internet is prohibited.

Behavior in the audience

Basic "yes" and "no"

It is important for a higher education student to follow the rules of good conduct at the university. These rules are common to all, they also apply to all faculty and staff, and are not fundamentally different from the generally accepted norms.

During classes it is allowed:

- leave the audience for a short time if necessary and with the permission of the teacher;
- drink soft drinks;
- take photos of presentation slides;
- take an active part in the course of the lesson (see Academic expectations from higher education seekers).

forbidden:

- eat (except for persons whose special medical condition requires another - in this case, medical confirmation is required);
- smoking, drinking alcohol and even low-alcohol beverages or drugs;
- use obscene language or use words that offend the honor and dignity of colleagues and faculty;
- gambling;

- damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter the premises and territories);
- shouting, shouting or listening to loud music in classrooms and even in corridors during classes.

With regard to persons with special educational needs, all students have the right to receive knowledge, including, if necessary, in a distance format.

Recommendations for successful completion of the discipline - active participation in the discussion in the audience, the student of higher education should be ready to understand the material in detail, ask questions, express their views, discuss. During the discussion it is important:

- respect for colleagues,
- tolerance for others and their experience,
- susceptibility and impartiality,
- the ability to disagree with the opinion, but to respect the identity of the opponent (s),
- careful argumentation of his opinion and the courage to change his position under the influence of evidence,
- self-expression, when a person avoids unnecessary generalizations, describes his feelings and formulates his wishes based on their own thoughts and emotions,
- Mandatory acquaintance with primary sources.

A creative approach in its various manifestations is welcome. Applicants from higher education are expected to be interested in participating in city, national and international conferences, competitions and other events in the subject profile.

Safety precautions

The first lesson of the course will explain the basic principles of labor protection by conducting appropriate training. It is expected that everyone should know where the nearest evacuation exit is, where the fire extinguisher is, how to use it, and so on.

5. ACADEMIC INTEGRITY

The Department of Epidemiology maintains zero tolerance for plagiarism. Applicants for higher education are expected to constantly raise their awareness of academic writing. The first classes will provide information on what to consider plagiarism and how to properly conduct research and scientific research. Additional points are credited for commission for individual educational and research tasks (IDP) for retrospective epidemiological analysis of infectious diseases, and presentation of research results at scientific and practical conferences of various levels (oral report, publication of abstracts, articles in professional journals, poster reports). However, if plagiarism is detected, the points will be canceled and deducted.

6. Recommended Books.

1. Jay S. Kim, Ronald J. Dailey Biostatistics for Oral Helthcare. Blackwell, Munkgaard. – 2008. – 330 p.
2. Gary D. Friedman. Primer of epidemiology. 5-th ed. p. McGraw-Hill: Professional, - 2004. – 401 p.
3. Trisha Greenhold. Fundamentals of evidence-based medicine. - M., 2004. - 240 p.
4. European Health for All Database (access mode: www.euro.who.int/en/home).
5. Health 2020 - the foundations of European policy and strategy for the 21st century. - WHO, 2013.-232 p.

7.INFORMATION RESOURCES

MOODLE

8.OTHER

Provisions on prevention, prevention and settlement of cases related to sexual harassment and discrimination in KhNMU http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog-sex.doc

Regulations on Academic Integrity and Ethics of Academic Relations at Kharkiv National Medical University http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_ad_etyka_text.pdf

The order of conducting classes on in-depth study by students of Kharkiv National Medical University of certain disciplines beyond the scope of the curriculum http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/nak-poriad-pogl-vyv-dysc.docx

Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of KhNMU http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_komis_ad_text.pdf

Regulations on the recognition of the results of non-formal education at Kharkiv National Medical University http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_neform_osv.pdf

INCLUSIVE EDUCATION: http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=7108%3A2021-03-10-14-08-02&catid=12%3A2011-05-10-07-16-32&Itemid=33&lang=uk

ACADEMIC INTEGRITY: http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=2520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk

http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/kodex_AD.docx

Guarantor of the educational program
Head of Department

prof. I.B. Janishen
prof. T.O. Chumachenko