MINISTRY OF HEALTH OF UKRAINE

KHARKIV NATIONAL MEDICAL UNIVERSITY

IV medical faculty

Department epidemiology

Branch of knowledge 22 «Healthcare»

Specialty 222 «Medicine»

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

SYLLABUS

EDUCATIONAL DISCIPLINE

**Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine**

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| --- | --- | --- |
| The syllabus of the discipline was approved at a meeting of the Department of EpidemiologyProtocol from“28” August 2020 № 17Head department,prof .\_\_\_\_\_\_\_\_\_\_\_ Т.О. Chumachenko |  | Approved by the methodical commission of KhNMU on problemsprofessional training of medical-preventive profileProtocol from“\_\_3” \_September\_ 2020 № 2Chairman of the methodical commission,Professor \_\_\_\_\_\_\_\_\_\_ VA Ognev |

The name of the discipline «**Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine»**

Developers:

Head of the Department of Epidemiology, KhNMU, MD n., Professor T.O. Chumachenko,

Associate Professor of Epidemiology, PhD N. L.A. Zhdamarova

Assistant of the Department of Epidemiology of KhNMU VI Makarova.

 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: no

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.

Contact phone and E-mail of the teacher 067-75-61-614 Email vi.makarova@knmu.edu.ua

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.

Contact phone 050-03-62-619; Email: ii.kliuchnyk@knmu.edu.ua

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 iTEP Academic-Plus Exam in August 2019.

Contact phone 067-318-38-08 Email yy.polyvianna@knmu.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 KNMU. 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 KNMU. Semerenska T.I. constantly improves his scientific and pedagogical skills.

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

**General information about the discipline.**

1. Description of the discipline

Course – 6

Specific semester / academic year - 11th or 12th semester 2020 - 2021 academic year

The volume of the discipline - 120 hours (4,0 ECTS credits), including 20 hours - practical classes, 100 hours – self-work of the student

General characteristics of the discipline –the discipline «Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine**»** is compiled in accordance with the Standard of Higher Education of Ukraine of the second (master's) level, field of knowledge 22 "Health", specialty 222 "Medicine", specialization (s) - doctor.

The discipline is studied in the 6th year, the study of the discipline is aimed at mastering the epidemiological method of research as the basis of research methodology and optimization of the process of diagnosis, treatment and prevention of diseases. Clinical epidemiology is a section of epidemiology that includes the methodology of obtaining in epidemiological research scientifically sound evidence of the patterns of clinical manifestations of the disease, methods of diagnosis, treatment and prevention, to make the best clinical decision for each patient.

Types of educational activities of students according to the curriculum are: a) practical classes, b) self-work of students (SWS), c) individual tasks, in the organization of which teachers' consultations play a significant role. Thematic plans of practical classes, SWS and individual tasks ensure the implementation in the educational process of all topics that are part of the discipline. Possible types of SWS of students: preparation for practical classes and study of topics considered only in terms of self-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, writing a review of a scientific article followed by a report on practical classes.

**2. The purpose and tasks of the discipline**

**2.1.** **The purpose of studying the discipline** «Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine» is the formation of knowledge of the epidemiological method of research as the basis of research methodology, optimization of the diagnosis, treatment and prevention of diseases and the use of evidence-based medicine in making informed decisions on treatment and prevention measures.

**2.2. The main tasks of studying the discipline** «Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine**»** are:

1. Assimilation of methodology of descriptive - evaluation, analytical, experimental research methods;
2. Formation of knowledge and skills to build a hypothesis about the causes and conditions of the disease;
3. Formation of knowledge and skills to confirm the hypothesis of the causes and conditions of the disease;
4. Formation of knowledge and skills to optimize diagnosis, treatment and prevention on the basis of clinical epidemiology;
5. Formation of knowledge on the levels of evidence and the ability to use them in their professional activities.

**The student must know:**

1. Types of epidemiological studies and their use;
2. Design and basics of organization of epidemiological research;
3. Methods of formal logic used in the formation of hypotheses about risk factors;
4. Random and systematic errors in analytical studies;
5. The concept of randomized clinical trial, its purpose, stages, basic principles of organization4
6. Risk factors that determine the development of the disease;
7. Sources of evidence;
8. Algorithm for evaluating a scientific publication;
9. Definition and basic principles of evidence-based medicine;
10. Levels of evidence of information;
11. Principles of systematic reviews and meta-analysis.

**The student must be able to:**

1. Assess the correctness of the organization and conduct of epidemiological studies;
2. Formulate hypotheses about possible risk factors for the development and spread of diseases;
3. Assess the potential efficacy and safety of drugs, diagnostic and screening tests;
4. Carry out statistical processing of results obtained during epidemiological studies;
5. Evaluate the publication for its scientific validity and evidence;
6. Use databases to search for information.

**3. Discipline status** - the discipline is chosen.

The format of the discipline is 50 % on-line, 50 % off-line.

**4. Teaching methods.**

1. Methods of educational and cognitive activities (study and analysis of the main program sections of the discipline).

2. Methods of stimulating and motivating educational and cognitive activities (solving situational problems, performing interactive tasks, modeling the situation, etc.).

3. Methods of control (self-control, mutual control), correction (self-correction, mutual correction).

4. Methods of improving the effectiveness of educational and cognitive activities (deepening knowledge through self-work and research, participation in the work of scientific student groups, conferences, competitions, student scientific forums, etc.).

Teaching aids are presentations, video materials, methodical recommendations, abstracts, situational tasks.

**5. Recommended Books.**

1. Gary D. Friedman. Primer of epidemiology. 5-th ed. p. McGraw-Hill: Professional, - 2004. – 401 p.
2. N.O. Vynograd General epidemiology. Kyiv. AUS Medicine Publishing. 2014. – 127 p.
3. Medical Epidemiology: Population Health and Effective Health Care, 5e Raymond S. Greenber. 2020. – 188 p.
4. European Health for All Database (access mode: [www.euro.who.int/en/home](http://www.euro.who.int/en/home)).
5. Official site of WHO <https://www.who.int/ru>, <https://www.who.int/countries/ukr/ru/>
6. Official site of CDC <https://www.multitran.com/c/M.exe?l1=1&l2=2&s=Centers+for+Disease+Control+>
7. R. Fletcher, S. Fletcher, E. Wagner Clinical epidemiology. Third edition. Williams and Wilkins, 1998. – 345 p.
8. How to read a paper. The basic of evidence-based medicine. Second edition. Trisha Greenhalgh. BMJ books, 2004. – 240 p.

**6. Prerequisites and co-requisites of the discipline** is based on the knowledge gained by students in the study of other basic disciplines - medical biology, microbiology, virology and immunology, epidemiology and evidence-based medicine, infectious diseases, biostatistics, public health medicine and integrates with these disciplines;

1. **The content of the discipline**

**Lecture topics**

According to the curriculum, lectures are not provided.

**Topics of practical classes**

|  |  |  |
| --- | --- | --- |
| **Practical** **class №**  | **Topics of practical classes** | **Hours** |
| 1 | Clinical Epidemiology as a science. Epidemiological method of research. Evolution of epidemiological methods of research. Modern structure of the epidemiological method. Descriptive epidemiological methods of research. Incidence rates. Intensity. Dynamics. Spatial characteristic. Description of the structure of morbidity and identification of risk groups. Formation of hypotheses about possible risk factors. Evaluation of hypotheses about the causes and conditions of disease occurrence (other outcomes). | 5 |
| 2 | Observational analytical epidemiological studies. Cohort epidemiological studies. Longitudinal (retrospective and prospective) studies. Advantages and disadvantages of cohort studies. Statistical processing of data obtained in cohort studies. Measurement of associations (effect of influence). Absolute, relative and attributive risk. Case-control studies. Stages of the "case-control" study. Advantages and disadvantages of the case-control study. The odds ratio. Cross-sectional studies. Aims, purpose, scope. Stages of conducting a Cross-sectional study. Advantages and disadvantages of Cross-sectional studies. | 5 |
| 3 | Experimental epidemiological studies. Classification of experimental epidemiological studies. Controlled, uncontrolled and natural epidemiological experiment. Epidemiological tests. Modeling the epidemic process. Organization of a randomized controlled trial. Pseudo-randomization. Blinding (masking) of the study: blind, double, triple and quarter blind tests. | 5 |
| 4 | Fundamentals of Evidence-Based Medicine. Finding Evidence. Database. The choice of information retrieval strategy. Sources of Evidence. Cochrane Commonwealth. Principles of the Cochrane Commonwealth. Cochrane Electronic Library.Final control. | 5 |
| Total hours of the practical classes | 20 |

**Self-work topics**

|  |  |  |
| --- | --- | --- |
| № | Topics | hours |
| 1 | Preparation for practical classes - theoretical training and development of practical skills | 8 |
| 2 | Performing individual course project | 14 |
| 3 | Basic methodological approaches of the epidemiological method. | 6 |
| 4 | Epidemiological data. Types of epidemiological data, collection and processing of epidemiological data. | 6 |
| 5. | Principles of planning epidemiological research. | 6 |
| 6. | Epidemiological observation. Descriptive - evaluative methods. Screening. Statistical observation. | 6 |
| 7. | Analytical methods. Retrospective and prospective research. Sample study. Study of epidemiological risk. | 6 |
| 8. | Formation of hypotheses about the causes of morbidity, their verification. | 8 |
| 9. | Experimental epidemiological studies. natural experiment. Uncontrolled and controlled experiment. Mathematical modeling. | 6 |
| 10. | Stages of drug development and implementation. Bioethical aspects of epidemiological research. Consent of participants. Evaluation of the effectiveness and safety of prophylactic and medicinal products. | 6 |
| 11. | Errors in epidemiological studies. Sources of errors. Systematic error, random error, cofounders. Ways to control errors. | 6 |
| 12. | Analysis of a scientific publication | 10 |
| 13. | Epidemiological analysis. Statistical indicators and standardized coefficients used in epidemiological studies. | 6 |
| 14. | Preparation for final control | 6 |
| **Total** | ***100*** |

1. **Discipline policy and values**

Academic expectations from students

Discipline requirements

It is expected that male and female students will attend all practical classes and complete all sections of self-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 students have questions, you can contact the teacher in person or by e-mail, which the teacher will provide in the first practical lesson.

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

Students must arrive on time, not be late, they must be dressed in a medical gown at class, 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 students to follow the rules of good behavior 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 lesson (see Academic expectations of students).

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.

Academic Integrity Policies

The Department of Epidemiology maintains zero tolerance for plagiarism. Male and female students are expected to constantly raise their awareness of academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

Policy for people 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, students 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 personality 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. Students are expected to be interested in participating in city, national and international conferences, competitions and other events in the subject profile

Incentives and penalties. Additional points are credited for the commission of 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.

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.

Procedure for informing about changes in the syllabus - the updated syllabus will be posted on the website of the educational institution with the note "updated".

**Evaluation policy**

 When studying the discipline, the current and final semester control is used. Also, there is a mandatory control of the assimilation of educational material of the discipline, assigned to self-work.

 **Current control** (assimilation of certain topics) is carried out in the form of oral interviews, discussions, testing, conversations of students on predetermined issues, in the form of speeches of higher education students with reports when discussing educational issues in practical classes.

 To assess the self-work of students, an alternative is offered (optional): traditional types of tasks: writing a test, abstract and solving situational problems, solving problem situations, providing practical recommendations or creative types: preparing a multimedia presentation, processing educational literature, etc.

 **The final semester control** in the discipline is a mandatory form of control of academic achievements of higher education students. It is performed orally. The terms of the final semester control are set by the schedule of the educational process, and the amount of educational material that is submitted for the final semester control is determined by the program of the discipline.

 The total number of rating points for the study of the discipline for the semester is calculated as the sum of points obtained by the results of the current control and points obtained by the results of the final semester control. The maximum amount of points for the semester is 200 points, the minimum - 120 points.

**Control methods**

 1. Method of oral control of theoretical material (survey, discussion).

 2. Methods of written control (answers to questions, problem solving, test control).

 3. Methods of control of practical skills and abilities (solving situational problems, solving problem situations, providing practical recommendations).

**Form of assessment of students' knowledge**

The form of final control of academic performance in the discipline is a test.

**Assessment of current learning activities**

Carried out in accordance with the "Instructions for the evaluation of educational activities under the European credit transfer system for the organization of the educational process" (order of the Kharkiv National Medical University from 22.02.2016 № 52.

**Assessment of current learning activities**

When assessing the mastery of each subject of the discipline, the student is graded on a national 4-point scale: "unsatisfactory", "satisfactory", "good", "excellent".

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 «Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine**»** is studied during the 1st semester. Discipline ends with a final control.

**Discipline assessment technology** (Table 6 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 IPA, 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 6.

Table 6

**Correspondence of estimates on a 200-point scale,**

**four-point (national) scale and ECTS scale**

|  |  |  |
| --- | --- | --- |
| Ratingon a 200-point scale | Assessment on the ECTS scale | Score forfour-point (national) scale |
| 180–200 | А | excellent |
| 160–179 | В | good |
| 150–159 | С | 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, working off of classes within one calendar month from the moment of omission 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;

**9. Control questions, tasks for self-work**

1. Evolution of epidemiological methods of research.

2. Epidemiological method. The modern structure of the epidemiological method.

3. Formation of "clinical epidemiology", goals, objectives.

4. History of the direction "scientifically substantiated (evidence) medicine".

5. 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.

6. Epidemiological data.

7. Basic principles of planning epidemiological research.

8. Types of epidemiological data. Collection of epidemiological data.

9. Standard case definition. Classification. The case is confirmed, probable and suspicious

(possible).

10. Problems of sample research. Sample size. Sampling. epidemiological study protocol.

11. Statistical indicators and standardized coefficients used in epidemiological studies.

12. Illustration of epidemiological data.

13. Central trend indicators (mode, median, arithmetic mean), calculation and interpretation of

discrepancy, standard deviation and confidence interval.

14. Graphical representation of data - images of manifestations of morbidity. Ways to illustrate

epidemiological data.

15. Tables, construction rules.

16. Linear graphs and charts, their comparative characteristics, scope.

17. Indicators of frequency and prevalence of morbidity.

18. Calculation and interpretation of relations, proportions, coefficients, incidence, prevalence,

mortality, lethality.

19. Intensity. Dynamics.

20. Territorial characteristics.

21. Description of the structure of morbidity and identification of risk groups.

22. Formation of hypotheses about possible risk factors. Evaluation of hypotheses about the causes

and conditions of diseases.

23. Cohort epidemiological studies. Longitudinal (retrospective and prospective) studies.

Advantages and disadvantages of cohort research

24. Statistical processing of data obtained in cohort studies. Measurement of associations (effect

of influence). Absolute, relative and attributive risk.

25. Case-control study. Stages, advantages and disadvantages. Odds ratio.

26. Sources of errors in epidemiological studies and ways to eliminate them.

27. Systematic error. Prejudice of choice. Information bias. Ways to control systematic error.

28. Accidental error. Types of random error. ά-error, β-error. Ways to fix an accidental error.

29. Cofounding factor. Ways to control interfering factors.

30. Randomization.

31. Restriction.

32. Statistical modeling.

33. Stratification analysis.

34. Modification of the effect.

35. Controlled, uncontrolled and natural epidemiological experiments. Epidemiological tests.

Modeling of the epidemic process.

36. Organization of a randomized controlled trial.

37. Pseudorandomization.

38. Blinding (masking) of the study: blind, double, triple and fourth blind trials.

39. Stages of drug development and implementation.

40. Bioethical aspects of epidemiological research. Consent of participants.

41. Evaluation of the effectiveness and safety of prophylactic and medicinal products.

42. Search for evidence. Databases. Choosing an information retrieval strategy. Sources of

evidence.

43. Systematic review and review of the literature. Meta-analysis.

44. Cochrane Commonwealth. Principles of the Cochrane Commonwealth.

45. Cochrane Electronic Library.

Individual tasks in the discipline «Methods of Epidemiology in Clinical Medicine. Fundamentals of Evidence-Based Medicine**»** is the implementation of individual research tasks in the form of an oral presentation with the presentation of the results of retrospective epidemiological analysis of infectious and non-infectious morbidity of a particular nosoform with derivation of manifestations and patterns of the epidemic process in individual areas, time groups and groups.

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 "cochlear" 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.

**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.

Guarantor of the educational program prof. N.G. Rindina

Head Department of Epidemiology prof. T.O. Chumachenko