

SYLLABUS
Spring semester 2025-2026 a.y. for
7M10102 specialty "Public Health" on
discipline Biostatistics and Epidemiology

| ID and name of course | Independent work of the student (SIW) | Number of credits | | | General number of credits | Independent work of the student under the guidance of a teacher (ISWT) | | |
|---|---|-------------------|----------------------------|---|---------------------------------|--|--|--|
| | | Lectures (L) | Practical classes (PC) | Lab. classes (LC) | | | | |
| BioE | 4 | 0 | 90 | - | 5 | 6. | | |
| ACADEMIC INFORMATION ABOUT THE COURSE | | | | | | | | |
| Learning Format | Cycle, component | Lecture types | Types of practical classes | | Form and platform final control | | | |
| <i>Offline</i> | | yes | | | Moodle: Creative task | | | |
| Lecturer - (s) | Farida Iskakova | | | | | | | |
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| Phone : | +77011013086 | | | | | | | |
| Assistant - (s) | | | | | | | | |
| e-mail : | | | | | | | | |
| Phone : | | | | | | | | |
| ACADEMIC COURSE PRESENTATION | | | | | | | | |
| Course Objective: | Expected Learning Outcomes (LO)* | | | Indicators of achievement of LO (IA) | | | | |
| to develop students' practical skills in planning and executing applied public health research by employing epidemiological study designs and statistical analysis methods, with the writing a scientific report. | 1. To describe the fundamental concepts, typology of study designs, core methodologies, and principles of statistical analysis in epidemiological research. | | | 1.1 Distinguishes between types of epidemiological study designs. 1.2 Demonstrates how the choice of study design informs the selection of appropriate measures of association and statistical tests. | | | | |
| | 2. To design a protocol for an epidemiological study. | | | 2.1 Develops a comprehensive study protocol that includes a theoretical part (research question, objectives, study design) and a practical part (participant selection, exposure and outcome measurement, and data management). 2.2 Defines variables and statistical methods for analysis. 2.3 Develops a research protocol using a standard template. | | | | |
| | 3. To perform descriptive statistical analysis of research datasets. | | | 3.1 Calculates and generates key descriptive statistics (e.g., measures of central tendency, dispersion, frequency) appropriate for the scale and distribution of all variables in a dataset. 3.2 Summarizes and presents the descriptive analysis through well-formatted tables and graphs that clearly characterize the study sample and highlight key patterns in the data. | | | | |
| | 4. To select and apply appropriate inferential statistical tests based on study aims and data characteristics. | | | 4.1 Justifies the choice of specific inferential statistical tests (e.g., t-test, chi-square, regression) based on the study design, measurement scales of variables, and underlying assumptions of the data. 4.2 Review results of inferential statistical analysis, and visualize in tables and graphs to perform associations between exposure and | | | | |

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| | | outcome. |
| | 5.To describe the fundamental concepts, typology of study designs, core methodologies, and principles of statistical analysis in epidemiological research. | 5.1 Critically interprets statistical results that links to the study's aims and existing evidence. 5.2. Write a well-structured report with appropriate visual aids and conclusions. |

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| Prerequisites | Biostatistics [96313] |
| Postrequisites | Advanced epidemiology |
| Learning Resources | <p>The main literature:</p> <ol style="list-style-type: none"> 1. Gordis Epidemiology, Sixth Edition. 2019.-ELSEVIER.-434 p. 2. Rothman, Kenneth J.; Greenland, Sander; Lash, Timothy L. Modern Epidemiology, 3rd Edition - 2008 Lippincott Williams & Wilkins <p>The additional literature:</p> <ol style="list-style-type: none"> 3. Principles of Epidemiology in Public Health Practice Third Edition An Introduction to Applied Epidemiology and Biostatistics.CDC, USA, 512 p. 4. Biyasheva, Zarema Maratovna. Introduction to Biostatistics (Biometry) [Text] : educational man. / Z. M. Biyasheva, A. V. Lovinskaya, 2017. - 181 p. <p>Research infrastructure:</p> <ol style="list-style-type: none"> 1. computer class <p>Professional scientific databases:</p> <p>https://www.who.org/</p> <p>https://www.cdc.gov/index.html:</p> <p>www.gapminder.com</p> <p>Online resources</p> <p>e-library KazNU</p> <p>K.Glaser, Anthony N. High-yield biostatistics, epidemiology, and public health [Электронный ресурс] : [Electronic resource] : monograph / A. Glaser. - 4th ed. - / Glaser, Anthony N., 2014. - 122 с. Faselis, Charles Behavioral Science. USMLE Step 1 [Электронный ресурс] : [Electronic resource] : Lecture Notes. / C. Faselis. - / Faselis, Charles, 2013. - 230 с.</p> <p>Software</p> <p>Excel program</p> <p>IBM SPSS program 26 version</p> |

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| Academic course policy | <p>Academic Values: Integration of science and education. The research work of students, undergraduates, and doctoral candidates represents a deepening of the educational process. It is carried out directly in the university's laboratories, scientific and design departments, and student scientific and technical associations. Independent student work at all levels of education is aimed at developing research skills and competencies through acquiring new knowledge using modern research and information technologies. Instructors at a research university integrate the outcomes of scientific activities into lecture and seminar topics, practical and laboratory classes, as well as into tasks for student scientific and technical work. These elements are reflected in the syllabus and ensure the relevance of training sessions and assignments.</p> <p>Attendance & Deadlines: The deadline for each task is indicated in the course calendar (schedule). Failure to meet deadlines will result in a loss of points.</p> <p>Academic Honesty: Practical and laboratory classes, along with student scientific work, foster independence, critical thinking, and creativity. Plagiarism, forgery, the use of cheat sheets, and cheating at any stage of task completion are unacceptable. Compliance with academic honesty during theoretical training and examinations is regulated, in addition to general policies, by the "Regulations on Checking Students' Text Documents for Borrowings." These documents are available on the main page of the University's Information System.</p> <p>Basic Principles of Inclusive Education: The university's educational environment is designed as a safe space where support is always available and where teachers maintain an equal attitude toward all students, and students toward each other, regardless of gender, race/ethnicity, religious beliefs, socioeconomic status, physical health, etc. Everyone needs the support and friendship of peers and fellow students. For all students, progress is measured more by what they can do than by what they cannot. Diversity enriches all aspects of university life.</p> <p>All students, especially those with disabilities, can receive counseling assistance via phone/email at iskakovaf@gmail.com or through WhatsApp video link via a permanent meeting link in MS Teams.</p> <p>Integration of MOOCs (Massive Open Online Courses): If a MOOC is integrated into the course, all students must register for it. The deadlines for completing MOOC modules must be strictly followed according to the</p> |
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| | course study schedule. |
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| | ATTENTION! The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course, as well as in the MOOC. Failure to meet deadlines results in loss of points. |
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| INFORMATION ABOUT TEACHING, LEARNING AND ASSESSMENT | | | |
|--|----------------------------------|--------------------------|---|
| Score-rating letter system of assessment of accounting for educational achievements | | | Assessment Methods |
| Grade | Digital equivalent points | points, % content | Assessment according to the traditional system |
| A | 4.0 | 95-100 | Great |
| A- | 3.67 | 90-94 | |
| B+ | 3.33 | 85-89 | Fine |
| B | 3.0 | 80-84 | |
| B- | 2.67 | 75-79 | |
| C+ | 2.33 | 70-74 | |
| C | 2.0 | 65-69 | Satisfactorily |
| C- | 1.67 | 60-64 | |
| D+ | 1.33 | 55-59 | Unsatisfactory |
| D | 1.0 | 50-54 | |

Calendar (schedule) for the implementation of the content of the course. Methods of teaching and learning.

| A week | Topic name | Number of hours | Max. ball |
|---|--|------------------------|------------------|
| MODULE 1 INTRODUCTION TO MEDICAL ECOLOGY | | | |
| | PC 1. Science of Epidemiology. Definition and Core functions and role of Epidemiology in Public Health. | 3 | 8 |
| | PC 2. Summarizing data, measuring frequency, and risk for disease. Application of standardization. | 3 | 7 |
| | PC 3. Study planning. Ecological study. Case-control study. | 3 | 7 |
| | ISWT 1. Consultations on the implementation of SIW 1. | | |
| | PC 4Study Planning. Cohort Studies. Experimental Studies. | 3 | 7 |
| | PC 5Diagnostic and Screening tests. Sensitivity, specificity, PPV and NPV of tests. | 3 | 7 |
| | ISWT 2. Consultations on the implementation of SIW 1. | | |
| | IWS 1 on 1-5 Seminar topics. | | |
| MODULE 2 ENVIRONMENTAL FACTORS | | | |
| | PC 6. Working in MS Excel. Organization and logic of database creation. Calculation of descriptive statistics measures. | 3 | 7 |
| | ISWT 3. Consultations on the implementation of SIW 2 | | 0 |
| | PC 7. Analysis of qualitative (categorical) variables. Fisher's exact test. Chi-square test. Z-test for comparing proportions. | 3 | 8 |
| | ISTW 4. Parsing and analyzing an article about an environmental problem. | | |
| | PC 8. Conducting one-way analysis of variance (ANOVA).. | 3 | 6 |
| | ISW2 on 5-8 seminars topic. | | 25 |
| Midterm 1 | | | 100 |
| | PC 9. Application of Student's t-test for paired (dependent) and independent samples.. | | 7 |
| | ISWT 5. Write an abstract on an environmental problem and medical interventions to reduce harm to public health (review of several articles).. | 3 | 17 |
| | PC 10. Measuring association between quantitative variables. Correlation analysis. Simple | 3 | 7 |

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| (univariate) linear regression analysis.. | | | |
| MODULE 3. OTHER ENVIRONMENTAL FACTORS | | | |
| PC 11. Application of Nonparametric Tests. Mann-Whitney U Test. Wilcoxon Signed-Rank Test.. | 3 | 7 | |
| SIW 3 on 9-11 seminars topic. | | | 25 |
| PC 12. Comparison of Multiple Groups. Kruskal-Wallis H Test. Friedman Test. | 3 | 7 | |
| PC 13. Assessment of nutrition and the impact of harmful substances associated with their quality and preparation on the population's health. | 3 | 7 | |
| ISWT 6. Overview of research results | | | |
| PC 14. Linear and Logistic Regression. | 3 | 7 | |
| PC 15. Fundamental Principles of Data Analysis. Analysis of Stratified Data and Statistical Results. Hypothesis Testing. | 3 | 8 | |
| ISW 4 on 14-16 seminars topic. | | | 25 |
| Midterm 2 | | | 100 |
| Final control (exam) | | | 100 |
| TOTAL for course | | | 100 |

Dean

_____**S.B. Kalmahanov**

**Chairman of the Academic Committee
on the quality of teaching and learning**

_____**G.M.Kurmanova**

Head of Department

_____**A.E.Ualiyeva**

Lecturer

_____**F.A. Iskakova**

RUBRICATOR OF THE SUMMATIVE ASSESSMENT
CRITERIA EVALUATION OF LEARNING OUTCOMES

Task name (points, % content from 100% MC, copy from the calendar (graphics) implementation of the content of the training course, methods of teaching and learning

| Criterion | "Excellent" Max. weight in % | "Good" Max. weight in % | "Satisfactory" Max. weight in % | "Unsatisfactory" Max. weight in % |
|-----------|---------------------------------|----------------------------|------------------------------------|--------------------------------------|
| | 95- 100 % | 80-94% | 64-79% | <63% |

| Criterion | "Excellent" 20-25% | "Good" 15-20% | "Satisfactory" 10-15% | "Unsatisfactory" 0-10% |
|-----------|-----------------------|------------------|--------------------------|---------------------------|
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THEMATIC PLAN AND CONTENT OF PRACTICAL STUDIES

| Nº | Topic | Content | Resources |
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| | 2 | 3 | 4 |
| 1 | Introduction to Epidemiology: Definition. Core | Basic concepts and areas of application. Theories of causality and probability. epidemiological triad. Factors related to the infectious agent, the environment, and the susceptible individual. The concept of the epidemic process and ways of transmission of infection. epidemiological approach. Fundamentals of surveillance. Population, sentinel, and syndromic surveillance. Mini presentation. CBL Case study. | <ol style="list-style-type: none"> 1. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, p. 20-54, 55-61, 61-78 2. Principles of Epidemiology in Public Health Practice, 3d Edition, CDC, US Department of Public Health, 2012. Lesson 1-4. 3. High-Yield Biostatistics, Epidemiology, & Public Health, 4th Edition, p.86-96 4. Kaplan USMLE, Lecture Notes, Behavioral Sciences and Social Science, 2017, p.3-10 5. An Introduction to Epidemiology. Wolfgang Ahrens, Klaus Krickeberg, Iris Pigeot, p.3-20 6. CDC-materials https://www.cdc.gov/csels/dsepds/ss1978/lesson5/section2.html |
| 2 | Epidemiological Study Design. | Epidemiological methods: descriptive, analytical, and experimental. Case reports (clinical cases), case series (series of cases); ecological, cross-sectional studies, case-control, cohort study. Randomized and non-randomized clinical trials. Measures, bias, and confounders. Advantages and limitations of epidemiological methods. Diagnostic and screening tests. | <ol style="list-style-type: none"> 1. Kaplan USMLE, Lecture Notes, Behavioral Sciences and Social Science, 2017, p.11-14, 17-24 2. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, p.197-232, p.158-194, p.235-247, p.250-280, p.282-296, 346-367 3. An Introduction to Epidemiology. Wolfgang Ahrens, Klaus Krickeberg, Iris Pigeot, p. 29-35 |

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| | | <p>sensitivity and specificity. Likelihood ratio. Predictive value (negative and positive). The use of epidemiological methods in clinical medicine. Glossary. Mini presentation. CBL - Case study.</p> | <p>4. High-Yield Biostatistics, Epidemiology, & Public Health, 4th Edition, p.57-71, 82-92 5. Wolfgang, A. Handbook of Epidemiology. 5 vol.//Ahrens Wolfgang, Peugeot Iris. - 2 ed. - Springer Reference, 2014, p.187-388</p> |
| 3 | Epidemiology of communicable and | <p>Epidemiology of infectious diseases. Occurrence, mechanism, and ways of transmission of infectious diseases.</p> <p>Epidemiological classification of infectious diseases. Standard case definition: presumptive, probable, and confirmed cases.</p> <p>Outbreak investigation. Stages of investigation. Anti-epidemic and preventive measures in the focus of infection. Glossary.</p> <p>Epidemiology of chronic non-communicable diseases: cardiovascular, oncological diseases, COPD, diabetes. Causes and conditions for the occurrence and spread of HND.</p> <p>Measurement of risks, prevalence rates, outcomes and treatment effectiveness. Epidemiology of dental diseases. Glossary. Mini presentation. CBL. case study.</p> | <p>1. High-Yield Biostatistics, Epidemiology, & Public Health, 4th Edition, p.96-100</p> <p>2. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, p. 54-56, p.328-335</p> <p>3. Wolfgang, A. Handbook of Epidemiology. 5 vol.//Ahrens Wolfgang, Peugeot Iris. - 2 ed.- Springer Reference, 2014, v.5</p> <p>4. Cancer Epidemiology: Principles and Methods. Isabel dos Santos Silva. WHO. -1999.-437 p.</p> <p>5. Communicable disease control in emergencies. A field manual. Edited by M.A. Connolly.2005.-194 p.</p> |
| 4 | 5 stages of Evidence-Based Medicine. Search and critical analysis of published research. | <p>Principles of Evidence-Based Medicine. The history of the development of Evidence-Based Medicine. World development experience. The value of Evidence-Based Medicine for clinical practice. 5 stages of evidence-based medicine. Formulation and transformation of a clinical problem into a question using the PICOT principle. Finding and identifying the best evidence to answer. Evaluation of the quality and reliability of evidence. Implementation of the results of a critical assessment in clinical practice and evaluation of the results of the work done (audit). Glossary.</p> <p>Select appropriate resources and search for evidence.</p> <p>Medline/PubMed, Cochrane Collaboration Data Base, Cochrane Library, EMBASE. Search strategy: keywords, logical operators (Boolean Operators), phrases (Phrase Search), by author (Author Search), by journal title (Journal Search), subject headings (MeSH) Operations with search results. Mini presentation. CBL Case study.</p> | <p>1. Fundamentals of Evidence-Based Medicine, K Prasad, 2013, 1-7 p, Chapter 2, 19-25 p</p> <p>2. Essential Evidence-based medicine, D, Mayer, 2010, 9-18 p</p> <p>3. Evidence-Based Answers to Clinical Questions for Busy Clinicians Workbook- 2009.-26p.</p> <p>4. Essentials of Evidence-based Clinical Practice. Second Edition. -2008.-349 p.</p> <p>5. Medline/PubMed, Cochrane Collaboration Data Base, Cochrane Library, EMBASE</p> |

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| 5 | Systematic review and meta-analysis. Evaluation of clinical protocols and recommendations. GRADE. | Studies summarizing other studies: a systematic review and meta-analysis. Stages of creating a systematic review. Stages of meta-analysis. Options for presenting meta-analysis results in a systematic review. Search strategy for systematic reviews. Assessing the quality of systematic reviews using the AGREE system. Evaluation of clinical guidelines. Recommendation classes: I, II, II-a, II-b, III. Glossary. Mini presentation. CBL - case studies. | <ol style="list-style-type: none"> 1. Literature Reviews in Social Work. Robin Kiteley and Christine Stogdon.- 2014.-20 p. 2. APPRAISAL OF GUIDELINES FOR RESEARCH & EVALUATION II. The AGREE Next Steps Consortium. - May 2009.-52 p. |
| 6 | Research proposal. Create and share questionnaire. | Conceptualization stage of health services research. Select and formulate a research problem. Theories and appropriate theoretical frameworks in health research. Types of research reviews (e.g., information synthesis, literature reviews, and meta-analysis) and their purposes. General categories in research review. | <ol style="list-style-type: none"> 1. Fundamentals of Evidence-Based Medicine, K Prasad, 2013, 27-31 p, 109-112 p 2. Essential Evidence-based medicine, D, Mayer, 2010, 367-377 p 3. Evidence-based medicine, Dermot P.B.McGovern et all, 2005, 62-76 p 4. How to read a paper. T. Greenhalgh. -2003.-240 p. 5. Evidence-Based Answers to Clinical Questions for Busy Clinicians Workbook. - 2009.-26p. |
| 7 | Measurement in Epidemiology. Frequencies, rates, ratio. | Counts, frequencies, rates and ratio. Measuring disease incidence, prevalence and mortality rates. Calculation and interpretation of indicators of morbidity, prevalence, mortality of the population. Visual presentation of epidemiological data. Registration of cases. Data collection system. Analysis, interpretation, and presentation of surveillance data. Glossary. Mini presentation. CBL Case study. | <ol style="list-style-type: none"> 1. Epi Info. -176 p. 2. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, p.55-61, p.371-376 3. Principles of Epidemiology in Public Health Practice, 3d Edition, CDC, US Department of Public Health, 2012. Lesson 5. 4. CAPABILITY 13: Public Health Surveillance and Epidemiological Investigation. Public Health Preparedness Capabilities: |
| 8 | Summarizing data: Properties and methods of Frequency Distributions. Measures of Central Location and spread. | Data, database. Mean, median and mode. Central location, types. Types of variables. Types of distribution, descriptive statistics. Databases (Excel, SPSS). | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |
| 9 | Types of statistical hypotheses. Hypothesis testing. P-value. Standard error and confidence interval. | Types of statistical hypotheses. Hypothesis testing. P-value. Standard error and confidence interval. | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |

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| 10 | Biostatistics: Descriptive statistics. Databases (Excel, SPSS). | | |
| 11 | Introduction to analytical statistics. Methods for analyzing qualitative variables, independent and related samples (Chi-square test. Fisher's exact test, McNemar's test). | Methods for the analysis of qualitative variables, independent and related samples (Chi-square test. Fisher's exact test, McNemar's test). | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |
| 12 | Parametric Tests (T-tests, ANOVA). | One-sample t-test, Two-sample t-test and Paired t-test., One-way ANOVA. | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |
| 13 | Non-parametric Tests (Mann-Whitney U-test, Wilcoxon U-test, Kruskal-Wallis Test, Friedman Test. | Mann-Whitney U-test, Wilcoxon U-test, Kruskal-Wallis Test, Friedman Test. | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |
| 14 | Correlation (Pearson and Spearman) and regression. Survival analysis Log-rank test. | Correlation. Pearson's correlation coefficient. Spearman's rank correlation coefficient. The sensitivity of the correlation coefficient. Survival curve. | <ol style="list-style-type: none"> 1. Fundamentals of Biostatistics. Seventh Edition. Rosner. - 2016.-856 p. 2. Primer of Biostatistics. Seventh Edition. Stanton A. Glantz, Ph.-2009.-297p. 3. Medical Statistics at a Glance Workbook. Front Cover. Aviva Petrie, Caroline Sabin. John Wiley & Sons, 2013 - Medical - 120 p. 4. SPSS Survival Manual 6th edition. Julie Pallant - 2016 |
| 15 | Presentation of research work in a thesis | Planning and organization of scientific research. Definition of the research topic, aim and objectives. Formulation of Hypothesis. Definition of research methods. Developing of a questionnaire/patient card. Data collection. Enter data in the SPSS database. Choosing statistical tests and data analysis. Creating tables, formation of conclusions. Graphical representation of data. Preparing a presentation. | <ol style="list-style-type: none"> 1. Radaev V.V. How to organize and present a research project: 75 simple rules. - M.: SU-HSE: INFRA-M, 2011 - 203 p. 2. Ospan E. Academic writing: the basics of writing a research paper., Almaty, 2020.-231 p. |

| № | Criterion (point-rating assessment) | 10 | 8 | 6 | 4 | 2 |
|------------------------------|---|--|---|--|---|---|
| | | excellent | above average | acceptable | requires correction | excellent above unacceptable |
| Oral questioning, discussion | 1 Basic knowledge of Epidemiology, Evidence-based Medicine and Biostatistics. | Full assimilation of the programme material. Demonstrated original thinking. Independently used additional literature. | Demonstrated standard thinking with full mastery of programme material. | Mastering of the material with non-principled inaccuracies in answers. | Learning the basics Understanding your mistakes and willingness to correct them. | Fundamental errors Constantly confused in answers, did not work through the core literature. |
| | 2 Knowledge of research design in Epidemiology. | | | | | |
| | 3 Knowledge of the epidemiology of communicable and non-communicable diseases. | | | | | |
| | 4 Knowledge of searching and critically analyzing publications. | | | | | |
| | 5 Organization of research. | | | | | |
| | 6 Knowledge and skills of descriptive and inferential methods of Biostatistics. | | | | | |
| | 7 Knowledge and skills of academic writing. | | | | | |
| | 8 Solving Test Tasks - 20 tests 1 test - 1 point | 20 | 16-18 | 11-15 | 6-10 | 1-5 |
| | 9 Group communication skills and professional attitude (especially when using IMO) | Contact and productive team member | Contactful and productive team member, although prefers individual work | Combines team and individual work | Tends to be individualistic | individual |
| | | | | | | |

Point-rating assessment of the student's independent work under the guidance of a teacher (maximum, 50 points)

| № | Evaluation criteria | 10 points | 8 points | 6 points | 4 points |
|----|--------------------------------|---|---|--|---|
| 1. | Completeness and accuracy. | Completes the assignment completely. | Completes the task with some inaccuracies. Shows standardized thinking and reasoning. | Completion of the task with significant errors. | Failure to complete the assignment. Does not show scientific thinking and practical skills. Weak skills in analyzing and presenting the |
| 2. | Critical thinking | Applies critical thinking and analysis skills in completing the assignment. Effective | Applies analysis skills. Good presentation of | Understands his/her mistakes and is ready to correct them. Weak analysis skills. | Failure to complete the assignment. Does not show scientific thinking and practical skills. Weak skills in analyzing and presenting the |
| 3. | Analytical skills | | | | |
| 4 | Presentation of the assignment | | | | |

CPC - creative assignment (maximum 90 points) + bonuses for English language

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|--|----|----|----|---|
| | 20 | 15 | 10 | 5 |
|--|----|----|----|---|

| 1 | Relevance of the problem | Very high | High | Sufficiently high | Not high |
|-------|--|-----------|------|-------------------|----------|
| 2 | Informativeness | | | | |
| 3 | Credibility | | | | |
| 4 | Logicality and consistency | | | | |
| 5 | Literature analysis | | | | |
| 6 | Practical relevance | | | | |
| 8 | Applicability in future practice | | | | |
| 9 | Presentation | | | | |
| 10 | Plagiarism check | | | | |
| bonus | * - for Kazakh/Russian groups - English language; for groups studying in English - performing the task in Russian or Kazakh language | | | | |

Kaplan Medical USMLE Step 1: Behavioral Science Lecture

Notes Paperback – January 1, 2013