SYLLABUS
Fall semester 2023-2024 academic year
Educational program "Public Health"

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 (SIWT)
		Lectures (L)	Practical classes (PC)	Lab. classes (LC)		
6B10105 Medical Ecology	4	15	90	-		6.

ACADEMIC INFORMATION ABOUT THE COURSE				
Learning Format	**Cycle, component**	**Lecture types**	**Types of practical classes**	**Form and platform final control**
Offline		yes		Task/exam
Lecturer - (s)	Farida Iskakova			
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Assistant - (s)				
e-mail :				
Phone :				

ACADEMIC COURSE PRESENTATION		
To form students' understanding of medical ecology and its importance for public health assessment, and to use the acquired knowledge and skills in their professional activities in the public health system.	1. Know the basic concepts and problems in ecology that have harmful effects on public health, using concepts, terms, and exposure factors.	1.1 Describes the concepts, basic concepts, and terms used in medical ecology. 1.2 Describes environmental changes and their impact on human health, as well as measures to eliminate and prevent health effects.
	2. Evaluate the impact of environmental factors on the human body to determine basic epidemiological indicators.	2.1 Classifies environmental exposures (types, duration, and effect) affecting public health.
		2.2 Describe observational data indicating negative environmental impacts. 2.3 Evaluate the reliability of information related to environmental issues and their impact on human health.
	3. Design an environmental study plan.	3.1 Draws up a research plan based on the main legislative and regulatory documents related to the quality of atmospheric air, drinking water and soil and the knowledge gained.
		3.2 Measures the impact of environmental factors on public health using exposure measurement and assessment measures.
	4. Present the results of an ecological study based on informative epidemiological indicators for comparative assessment of the health status of the population	4.1 Presents results in the form of graphs and tables.
		4.2Formulates conclusions for presentation in theses, articles, and reports.
	5. Analyze a statistical study based on quantitative methods and new information technologies.	5.1. Uses methods of detection, measurement, and quantification of major pollutants to assess the population's environmental and epidemiological well-being.

		5.2. Uses the results of environmental research and statistical information to identify trends and predict their impact on human health.
Prerequisites		
Postrequisites		
Learning Resources	Literature: main and additional. 1. Ecological Medicine, 2nd Edition: The Antidote to Big Pharma and Fast Food by Dr. Sarah Myhill and Craig Robinson.-2023.- 512 p. 2. Environmental Medicine. J.Fowles, Ph.Weinstein, Ch-H Tseng. DOI:10.1007/978-94-007-4375-5_24 3. Ecological Medicine 2ND Edition: The antidote to Big Pharma and Fast Food . By Sarah Myhill and Craig Robinson, 2023. -526 p. 4. Environmental and Health Impacts of Air Pollution:A Review Ioannis Manisalidis, Elisavet Stavropoulou,Agathangelos Stavropoulos and Eugenia Bezirtzoglou//Frontiers in Public Health, 2020.- 1-13 pp. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://com-mendeley-prod-publicsharing-pdfstore.s3.eu-west-1.amazonaws.com/1e1a-CC-BY-2/10.3389/fpubh.2020.00014.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjEO%2F%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FwEaCWV1LXdlc3QtMSJ Research infrastructure 1. Auditorium Internet resources 1. Kaznu Library 2. MOOC / video lectures, etc. 3.www.who.org 4. www.cdc.gov 5. https://pubmed.ncbi.nlm.nih.gov/ Software (optionally) 1. IBM SPSS – 26 version 2. Excel program	

Academic course policy	**Academic values: Integration of science and education.** The research work of students, undergraduates, and doctoral students is a deepening of the educational process. It is organized directly at the university's laboratories, scientific and design departments, and student scientific and technical associations. Independent work of students at all levels of education is aimed at developing research skills and competencies based on obtaining new knowledge using modern research and information technologies. A research university teacher integrates the results of scientific activities into the topics of lectures and seminars (practical) classes, laboratory classes, and the tasks of the SSWT and SSW, which are reflected in the syllabus and are responsible for the relevance of the topics of training sessions and assignments. **Attendance.** The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course—failure to meet deadlines results in loss of points. **Academic honesty.** Practical/laboratory classes, SSW, develop the student's independence, critical thinking, and creativity. Plagiarism, forgery, cheat sheets, and cheating at all stages of completing tasks are unacceptable. Compliance with academic honesty during the period of theoretical training and at exams, in addition to the main policies, is regulated by "Regulations on checking students' text documents for borrowings". Documents are available on the main page of IS Univer. **Basic principles of inclusive education.** The university's educational environment is conceived as a safe place where there is always support and equal attitude from the teacher to all students and students to each other, regardless of gender, race/ethnicity, religious beliefs, socio-economic status, physical health of the student, etc. All people need the support and friendship of peers and fellow students. For all students, progress is more about what they can do than what they can't. Diversity enhances all aspects of life. All students, especially those with disabilities, can receive counseling assistance by phone/e- mail *iskakovaf@gmail.com* or whats up via video link in MS Teams *enter a permanent link to the meeting.* **Integration MOOC (massive open online course).** In the case of integrating MOOC into the course, all students need to register for MOOC. The deadlines for passing MOOC modules must be strictly observed by the course study schedule.

	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.

INFORMATION ABOUT TEACHING, LEARNING AND ASSESSMENT

Score-rating letter system of assessment of accounting for educational achievements

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	

Assessment Methods

Criteria-based assessment is the process of correlating actual learning outcomes with expected learning outcomes based on clearly defined criteria. Based on formative and summative assessment.

Formative assessment is a type of assessment that is carried out in the course of daily learning activities. It is the current measure of progress. Provides an operational relationship between the student and the teacher. It allows you to determine the capabilities of the student, identify difficulties, help achieve the best results, and timely correct the educational process for the teacher. The performance of tasks, and the activity of work in the classroom during lectures, seminars, and practical exercises (discussions, quizzes, debates, round tables, laboratory work, etc.) are evaluated. Acquired knowledge and competencies are assessed.

Summative assessment - a type of assessment, which is carried out upon completion of the study of the section by the program of the course. Conducted 3-4 times per semester when performing SIW. This is the assessment of mastering the expected learning outcomes of the descriptors. Allows you to determine and fix the level of mastering the course for a certain period. Learning outcomes are evaluated.

Formative and summative assessment	**Points % content**
1. Activity in discussions of topic in classes	**1. 10**
2. Work in practical classes	**2. 10**
3. Independent work	**3. 10**
4. Design and creative activity	**4. 30**
5. Final control (exam)	**5. 40**

Activity in discussions of topics in classes	10
Work in practical classes	10
Independent work	10
Design and creative activity	30
Final control (exam)	40
TOTAL	100

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		
1	L.1.Global problems of ecology		
	PC 1. Subject of medical ecology as a science and field of practice.	6	5
2	L.2 Modern concepts and trends in medical ecology.		
	PC 2. Modern concepts and trends in medical ecology.	6	5
	SIWT 1. Control work, tests, individual/group projects, essays, situational tasks, testing, portfolio, etc. at the teacher's choice. Estimated 25-30 % of the total points for foreign control. Consultations on the implementation of SIW 1. ATTENTION. Number of SIWT (6-7), SIW (2-5) for 15 weeks.		
3	L.3. The quality of the human environment		
	PC 3. The quality of the human environment.	6	5
	SIW 1. Choose one health problem and describe using epidemiological questions What? Where? When? Who? Why? and How?	**9**	15
4	L.4. Ecological environmental factors: human influence and adaptation.		
	PC 4. Influence and adaptation of the human organism to ecological environmental factors.	6	5
5	L.5. Concepts of 'health risk' and environmental risk'.		
	PC 5. Concepts of 'health risk' and environmental risk' Stages of risk assessment. Risk management.	6	5
	MODULE 2 ENVIRONMENTAL FACTORS		
6	L.6. Environmental monitoring: biological and socio-ecological types.		
	PC 6. Methods of risk assessment and impact of environmental factors on public health.	6	**5**
	SIWT 2. Colloquium (situational task). Consultations on the implementation of SIW 2		
7	L.7. Regulatory documents assessing maximum permissible concentrations of harmful substances in water, air, and soil.		
	PC 7. Regulatory documents for assessment of maximum permissible concentrations of harmful substances in water, air, and soil.	**6**	**5**
	SIW 2. Parsing and analyzing an article about an environmental problem.	**10**	**15**
Midterm control 1 (tests)			**100**

8	L.8. Assessment of the atmosphere and the impact of its polluting factors on public health.		
	PC 8. Assessment of the impact of environmental pollution on the health of the population.	**6**	**5**
	SIWT 3. Consultations on the implementation of SIW 3		
9	L. 9. Assessment of the hydrosphere and the impact of its pollutants on public healthю.		
	PC 9. Assessment of the hydrosphere and the impact of its pollutants on public health.	**6**	**5**
	SIW 3. Write an abstract on an environmental problem and medical interventions to reduce harm to public health (review of several articles)..	**9**	**15**
10	L.10. Evaluate the lithosphere and its polluting factors on public health.		
	PC 10. Assessment of lithosphere and its polluting factors on public health.	**6**	**5**
	SIWT 4. Consultation on the implementation of SIW 4		
MODULE 3. OTHER ENVIRONMENTAL FACTORS			
11	L.11. Physical environmental factors and their evaluation.		
	PC 11. Assessment of physical environmental factors and their evaluation. Action plans to reduce the harmful effects of physical substances.	**6**	**5**
	SIWT T 5. Consultation on the implementation of SIW 4		
12	L.12. Chemical environmental factors and their assessment.		
	PC 12. Assessment of chemical environmental factors and their impact on public health. Action plans to reduce the harmful effects of chemicals.	**6**	**5**
13	L.13. Environmental problems of nutrition.		
	PC 13. Assessment of nutrition and the impact of harmful substances associated with their quality and preparation on the population's health.	**6**	**5**
	SIW 4. Overview of research results	**10**	**15**
14	L.14. Environmental issues associated with the interior of buildings and their impact on human health.		
15	PC 14. Assessment of indoor spaces and their impact on health.	**6**	**5**
	L.15. Climate Change.		
	PC 15. Climate change and its impact on public health.	**6**	**5**
	SIWT 6. Consultation on final exam		
Midterm control 2 (tests)			**100**
Final control (exam)			**100**
TOTAL for course			**100**

Dean _____ **S.B. Kalmahanov**

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%

THEMATIC PLAN AND CONTENT OF PRACTICAL STUDIES

№	Topic	Content	Resources
	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.	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/dsepd/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.	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

		sensitivity and specificity. Likelihood ratio. Predictive value (negative and positive). The use of epidemiological methods in clinical medicine. Glossary. Mini presentation. CBL - Case study.	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
3	Epidemiology of communicable and	Epidemiology of infectious diseases. Occurrence, mechanism, and ways of transmission of infectious diseases. Epidemiological classification of infectious diseases. Standard case definition: presumptive, probable, and confirmed cases. Outbreak investigation. Stages of investigation. Anti-epidemic and preventive measures in the focus of infection. Glossary. Epidemiology of chronic non-communicable diseases: cardiovascular, oncological diseases, COPD, diabetes. Causes and conditions for the occurrence and spread of HND. Measurement of risks, prevalence rates, outcomes and treatment effectiveness. Epidemiology of dental diseases. Glossary. Mini presentation. CBL. case study.	1. High-Yield Biostatistics, Epidemiology, & Public Health, 4th Edition, p.96-100 2. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, p. 54-56, p.328-335 3. Wolfgang, A. Handbook of Epidemiology. 5 vol.//Ahrens Wolfgang, Peugeot Iris. - 2 ed.- Springer Reference, 2014, v.5 4. Cancer Epidemiology: Principles and Methods. Isabel dos Santos Silva. WHO. -1999.-437 p. 5. Communicable disease control in emergencies. A field manual. Edited by M.A. Connolly.2005.-194 p.
4	5 stages of Evidence-Based Medicine. Search and critical analysis of published research.	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. Select appropriate resources and search for evidence. 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.	1. Fundamentals of Evidence-Based Medicine, K Prasad, 2013, 1-7 p, Chapter 2, 19-25 p 2. Essential Evidence-based medicine, D, Mayer, 2010, 9-18 p 3. Evidence-Based Answers to Clinical Questions for Busy Clinicians Workbook- 2009.-26p. 4. Essentials of Evidence-based Clinical Practice. Second Edition. -2008.-349 p. 5. Medline/PubMed, Cochrane Collaboration Data Base, Cochrane Library, EMBASE

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.	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.	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. Frequences, 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.	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).	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.	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

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).	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.	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.	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.	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.	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. Applies critical thinking and analysis skills in completing the assignment. Effective	Completes the task with some inaccuracies. Shows standardized thinking and reasoningю. Applies analysis skills. Good presentation of	Completion of the task with significant errors. 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
2.	Critical thinking				
3.	Analytical skills				
4	Presentation of the assignment				

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

		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				

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