SYLLABUS
Fall semester 2022-2023 academic years
on the educational program "6B10103-General Medicine"

Discipline's code	Discipline's title	Independent work of students (IWS)	Number of credits			Number of credits	Independent work of student with teacher (IWST)
			Lectures (L)	Practical training (PT)	Laboratory (Lab)		
PiO2217	Patient and Society	3	-	90	-	6	

Academic course information

Form of education	Type of course	Types of lectures	Types of practical training	Form of final control
Full-time	Applied	-	seminar	Exam: Written exam: project, creative task
Lecturer	Iskakova Farida			
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Lecturer	Saktapov Akylbek			
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Telephone number	+77027403242			
Lecturer	Ualiyeva Aliya			
e-mail	Aliya.Ualieva@kaznu.kz			
Telephone number	+77074316857			
Lecturer	Әбілқайыр Назерке Әзімханқызы.			
e-mail	abilkaiyr.nazerke@gmail.com			
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Lecturer	Kamhen Vitali Bronislavovich			
e-mail	Vitaliy.kamhen@kaznu.edu.kz			
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Aim of course	Expected Learning Outcomes (LO)* As a result of studying the discipline the undergraduate will be able to:	Indicators of LO achievement (ID) (for each LO at least 2 indicators)
The aim of course is to form knowledge of the basics of epidemiology, evidence-based medicine and biostatistics, skills, and abilities to plan and conduct scientific research on public health	1. Apply knowledge of the principles and methods of epidemiology and modern epidemiological approaches to the study of the incidence of the population at the population level.	1.1 Analyses the prevalence of diseases by time and place of occurrence of diseases, and personal characteristics of patients. 1.2 Calculates and interprets disease prevalence values and estimates disease levels to determine an outbreak. 1.3 Uses methods of analytical epidemiology to determine the causal relationship of external and internal factors with the occurrence of diseases in populations. 1.4 Participates in the epidemiological investigation of a case of an infectious disease. 1.5 Uses knowledge of the mechanisms and ways of transmission of infection to carry out anti-epidemic and preventive measures in the focus of infection. 1.6 Uses knowledge of the ethology and mechanism of development of chronic non-communicable diseases to carry out preventive measures in population groups. 1.7. Has the skills to use registers of patients with various diseases to monitor the incidence of the population.
	2. Use the acquired knowledge to plan epidemiological studies, considering the classification and hierarchy of evidence for results.	2.1 Critically evaluates the advantages and limitations; and selects the appropriate design of epidemiological studies to address

		diagnostic, etiological, prognostic, and therapeutic questions in clinical medicine. 2.2 Complies with ethical principles when conducting scientific research.
	3. Possess knowledge of the basics of Evidence-Based Medicine for critical evaluation of scientific and medical information for rational use in further scientific and practical activities.	3.1. Formulates a research question using the PICO, PICOT structure. 3.2. Has the skills to search for scientific publications in the evidence bases PubMed/Medline, Cochrane library, Embase, etc. 3.3. Conducts a selection of evidence-based scientific and medical information for writing a literature review on the research topic.
	4. Use knowledge of modern statistical methods and programs in scientific and clinical activities.	4.1. Distinguishes between types of variables, methods of description and statistical analysis depending on the types of variables and samples 4.2. Applies descriptive statistics measures according to variable types 4.3. Formulates statistical hypotheses 4.4. Determines the statistical significance of relationships and differences for all types of variables, applying the appropriate statistical test 4.5. Analyses the results of statistical processing 4.6. Formulates conclusions for presentation in abstracts, articles, reports
	5. Use the acquired knowledge, skills, and abilities while studying the discipline to conduct an independent scientific study of public health problems	5.1 Plans scientific research and organization (topic, choice of research methods, statistical methods) 5.2 Searches for publications and writes a literature review. 5.3 Conducts research (creation of a questionnaire, collection). 5.4. Creates a database and performs statistical processing of the results. 5.5 Draws up the results of the study. Presentation.
Prerequisites		
Post requisites		
Information resources **	**Literature:** Epidemiology 1. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013. 2. Principles of Epidemiology in Public Health Practice, 3d Edition, CDC, US Department of Public Health, 2012. 3. High-Yield Biostatistics, Epidemiology, & Public Health, 4th Edition, Kaplan USMLE, Lecture Notes, Behavioral Sciences and Social Science, 2017.-229p. 4. Wolfgang, A. Handbook of Epidemiology. 5 vol.//Ahrens Wolfgang, Peugeot Iris. - 2 ed.- Springer Reference, 2014. *Additional literature* 5.Water, Sanitation, & Environmentally related Hygiene//https://www.cdc.gov/ healthy water/hygiene/audience-healthprofessionals.html 6.Modern Epidemiology. 3rd Edition Keneth.J.Rothman, Sander Greenland, Timothy L.Lash.-2008.-158 p. *Biostatistics* 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	

	5. Epi Info for windows// www.cdc.gov/epiinfo /pc.html *Evidence-Based Medicine* 1. Evidence-Based Medicine. How to Practice and Teach EBM (3rd Edition). S.E. Straus, W.S. Richardson, Paul Glasziou, R. Brian Haynes. 2. Literature Reviews in Social Work. Robin Kiteley and Christine Stogdon - 2014.-20 p. Additional literature 1. Evidence-Based Answers to Clinical Questions for Busy Clinicians Workbook - 2009.- 26p. 2. Appraisal of Guidelines for Research & Evaluation II. The AGREE Next Steps Consortium May 2009.-52 p. **Internet resources:** 1. http://elibrary.kaznu.kz/ru 2. www.who.org 2. www.cdc.gov 3. www.medscape.com 4. www.oxfordmedicine.com 5. www.uptodate.com 6. www.medline 7. www.cockrane.library 8. https://pubmed.ncbi.nlm.nih.gov/ 9. http://www.gbd.org/
Academic policy of the course in the context of university moral and ethical values	**Academic Behaviour Rules:** All students are required to register for the MOOC. The deadlines for completing the modules of the online course must be strictly observed in accordance with the schedule for studying the discipline. Leave in case of current MOOC or SPOC courses. **ATTENTION!** Failure to meet deadlines results in loss of points! The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the training course, as well as in the MOOC. Leave in case of current MOOC or SPOC courses. **Academic values:** - Practical trainings/laboratories, IWS should be independent, creative. - Plagiarism, forgery, cheating at all stages of control are unacceptable. - Students with disabilities can receive counselling at e-mail *******@gmail.com.
Evaluation and attestation policy	**Criteria-based evaluation:** assessment of learning outcomes in relation to descriptors (verification of the formation of competencies in midterm control and exams). **Summative evaluation:** assessment of work activity in an audience (at a webinar); assessment of the completed task. Final control on the discipline of 2 stages: Stage 1 - MCQ for understanding and application of knowledge. II. Stage-short case The method of assessing the SIW is the result of the implementation of the educational project

CALENDAR (SCHEDULE) THE IMPLEMENTATION OF THE COURSE CONTENT:

week	Topic name	Number of hours	Max. score***
1	**Sem 1.** Introduction to Epidemiology	6	5
2	**Sem 2.** Epidemiological Methods and Study Design	6	5
	IWST 1. Preparation for IWS 1. Introduction to scientific research.		
3	**Sem 3.** Epidemiology of infectious diseases. Outbreak investigation.	6	6
4	**Sem 4.** Epidemiology of chronic noncommunicable diseases.	6	6
5	**Sem 5.** Fundamentals of Evidence-Based Medicine and 5 stages of Evidence-Based Medicine.	6	6
	Colloquium		20
6	**Sem 6.** Search and critical analysis of scientific medical publications.	6	6
	IWS 1. Definition of the research topic. Search, selection of publications and writing a literature review		40
7	**Sem 7.** Fundamentals of surveillance. Sanitary and epidemiological regime in medical and preventive organizations.	6	6
	Midterm 1		100
8	**Sem 8.** Introduction to Biostatistics. Types of variables. Types of distribution, descriptive statistics. Databases (Excel, SPSS).	6	5

9	**Sem 9.** Types of statistical hypotheses. Hypothesis testing. P-value. Standard error and confidence interval.	6	5
	IWST 2. Preparation for IWS 2. Organization of scientific research.		
	IWS 2. Formation of the database and description of research methods.		30
10	**Sem 10.** Introduction to analytical statistics. Methods for the analysis of qualitative variables, independent and related samples (Chi-square test. Fisher's exact test, McNemar's test).	6	5
11	**Sem 11.** Parametric Tests (T-tests, ANOVA).	6	5
12	**Sem 12.** Non-parametric Tests (Mann-Whitney U-test, Wilcoxon U-test, Kruskal-Wallis Test, Friedman Test.	6	5
13	**Sem 13.** Correlation (Pearson and Spearman) and regression. Survival analysis Log-rank test.	6	5
	IWST 3. Preparation for the IWS 3. Discussion of the results and formulation of the conclusions of the scientific project.		
14	**Sem 14.** Systematic review and meta-analysis. Evaluation of clinical protocols and recommendations. GRADE.	6	5
	IWS 3. Discussion of the results and formulation of the conclusions of the scientific project.		30
15	**Sem 15.** Presentation of scientific projects.	6	5
	IWST 4. Consultation on examination issues		
	Midterm 2		100

THEMATIC PLAN AND CONTENT OF PRACTICAL STUDIES

№	Topic	Content	Resources
	2	3	4
1	Introduction to Epidemiology	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. Measuring disease prevalence rates. Calculation and interpretation of indicators of morbidity, prevalence, mortality of the population. Visual presentation of epidemiological data. Glossary. 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 Methods and 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. sensitivity and specificity. Likelihood ratio. Predictive value (negative and positive). The use of epidemiological methods in clinical medicine. Glossary. Mini presentation. CBL - Case study.	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 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 infectious diseases. Outbreak investigation.	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. 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	Epidemiology of chronic noncommunicable diseases.	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 2. Gordis, Leon, Epidemiology, 5th Edition, W.B. Saunders Company, 2013, 418 p. 3. Wolfgang, A. Handbook of Epidemiology. 5 vol.//Ahrens Wolfgang, Peugeot Iris. - 2 ed.- Springer Reference, 2014, \
5	Fundamentals of Evidence-Based Medicine and 5 stages of Evidence-Based Medicine.	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. 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.
6	Search and critical analysis of scientific medical publications.	Select appropriate resources and search for evidence. Medline/PubMed, Cochrane Collaboration Data Base, Cochrane Library, EMBASE. Search strategy: keywords, logical operators (Boolean Operators), by phrases (Phrase Search), by author (Author Search), by journal title (Journal Search), subject headings (MeSH) Operations with search results.	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	Fundamentals of surveillance. Sanitary and epidemiological regime in medical and preventive organizations.	Fundamentals of surveillance. Population, sentinel, and syndromic surveillance. Registration of cases. Data collection system. Analysis, interpretation, and presentation of surveillance data. Sanitary and anti-epidemic regime in dental institutions. 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	Introduction to Biostatistics. Types of variables. Types of distribution, descriptive statistics. Databases (Excel, SPSS).	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	Introduction to analytical statistics. Methods for the analysis of 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
11	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
12	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
13	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
14	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.
15	Presentation of scientific	Planning and organization of scientific research. Definition of	1. Radaev V.V. How to organize and present a research project: 75 simple

	projects.	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.	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.

Score-rating assessment of a practical lesson for the integrated course "Patient and Society"

	№	Criteria	10	8	6	4	2
			Excellent	***Above average***	***Acceptable***	***Correction needed***	***Unacceptable***
Criteria	1	Understanding the subject matter	Understanding the topic and answering questions in complete sentences. Ability to think clearly and rationally. Achieving the goal of the lesson. Good communication with groupmates and the lecturer.	Understanding the topic with some inaccuracies in the answers. Standard thinking and reflections. Full achievement of the main objectives of the lesson. Good communication with groupmates the lecturer.	Understanding the topic with inaccuracies in the answers. Standard thinking, there are erroneous thoughts. Assimilation of material with unprincipled inaccuracies in the answers. Misunderstandings with groupmates and the lecturer are possible.	Incomplete understanding of the topic, the tolerance of significant errors in the answers. Understanding mistakes and willingness to correct them. Misunderstandings with groupmates and the lecturer are possible.	Lack of understanding of the topic of the lesson, no readiness to correct erroneous judgments. Lack of understanding with groupmates and lecturer.
	2	Answering questions in complete sentences, tests					
	3	Ability to think clearly and rationally					
	4.	Achieving the goal of the lesson					
	5	Good communication with groupmates and the lecturer during TBL					
	6.	Understanding the erroneous judgments, willingness to correct.					

Lecturers _____Iskakova F.A
_____Ualiyeva A.Y.
_____Saktapov A.K.

Head of the Department _____Mamyrbekova S.A.