SYLLABUS
Fall Semester
2020-2021 Academic Year
Educational program: «7M10104 –Medicine Physician-researcher»

Discipline's code	Discipline's title	Independent work of students (IWS)	No. of hours			Number of credits	Independent work of students with guidance from the teacher (IWST)
			Lect.	Pract.	Lab.		
DM 5207	Evidence-Based Medicine	98	15	30	-	5	7

Type of learning	Type of the course	Types of lectures		Types of practical class		No. of IWS	Form of final control
Online	Theoretical	mixed		Webinar		3	Test / Exam
Lecturer	Iskakova Farida						
e-mail	iskakova.farida@kaznu.kz						
tel	+77011013086						

Academic presentation of the course

Aim of course:	Expected learning outcomes (LO) As a result of studying the discipline, the student will be able to:	Indicators of achievement LO (IA) (for each LO at least 2 indicators)
To build master students' ability to plan and conduct research in Public Health	1. Understand principles of EBM and search for information in scientifically proven databases	1.1 Create stages and methodology of scientific research on EBM
		1.2 Identify a problem and poses an issue with PICOT components
		1.3 Define a scientifically proven database
		1.4 Form keywords for the search string (exact terms and relationships between terms within a topic)
		1.5 Work with search operators
		1.6 Look through and select the found scientific information
	2. Describe and classify epidemiological studies, the main methods of their implementation, the features of analysis of data obtained in the course of conducting research in the field of Public Health.	2.1 Distinguish between types of epidemiological studies
		2.2 Distinguish scientific research by credibility
		3.1 Defines comparison groups for epidemiological studies.

	3. To plan the epidemiological studies needed to find medical evidence.	3.2 Creates research design.
		3.3 Distinguish between different levels of evidence and corresponding categories of clinical trials.
	4. Justify and present the results of the epidemiological study based on evidence	4.1 Evaluate evidence on the basis of its validity, reliability and applicability
		4.2 Present the results of the found information (articles) in the form of graphs and tables.
		4.3 Formulates conclusions for presentation in theses, articles, reports.
	5. Assess the associations between risks' factors on various aspects of population health	5.1 Compares the obtained research results and correlates with the world data and / or previous research.
		5.2 Integrate and apply evidence in a clinical setting.
		5.3 Provides statistically valid solutions to the health problem under study.
Prerequisites	Bio2215, OE3216	
Post-requisite	RBDONI6206, NIRM 4, EE5307	
Literature and resources	**Literature:** 1. Trisha Trinhalk. Bases of Evidence-based Medicine, 2010.-222 p. 2. AGREE II VERSIONS & UPDATES AGREE II Original Public Release and Publication Date: 2009/2010 AGREE II Update: September 2013 AGREE II Update: December 2017 3. Evidence-Based Medicine Guidelines. John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England.- 2005.- 1343 p. 4. Users' Guides to the Medical Literature: Essentials of Evidence-Based Clinical Practice, Third Edition (Uses Guides to Medical Literature) by Gordon Guyatt, 2015.-402 p. **Additional Literature:** 5. Key topics. Evidence-based medicine. D.P.V. MqGoverin, R.M. Valori, W.S.M. Summerskill, M. Levi, 2001.-167 p. 6. AGREE II. Instrument. The AGREE next steps consortium, 2017.- 52 p. 7. Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB, RW Scott: Evidence based medicine: what it is and what it isn't. Editorial. BMJ 1996; 312: 71–2. 8. REVIEW ARTICLE Critical Appraisal of Scientific Articles Part 1 of a Series on Evaluation of Scientific Publications Jean-Baptist du Prel, Bernd Röhrig, Maria Blettner 9. Evidence Based Medicine – New Approaches and Challenges Izet Masic, Milan Miokovic, Belma Muhamedagic Faculty of Medicine, University of Sarajevo, B&H/PROFESSIONAL PAPER vol 16 no 4 DECEMBER 2008 **Electronic sources:** 10. www.who.org 11. www.cdc.gov	

	12. www.medline 13. www.cockraine.library 14. www.PubMed.
Academic policy of the course in the context of university moral and ethical values	**Academic Behavior Rules:** The deadlines for completing the online course modules must be strictly observed in accordance with the schedule for studying the discipline. **ATTENTION!** Failure to meet deadlines results in loss of points! The deadline for each assignment is indicated in the calendar (schedule) for the implementation of the content of the training course. **Academic values:** − Practical class, IWS should be independent, creative − Unacceptable plagiarism, forgery, the use of cheat sheets, cheating at all stages of knowledge control − Students with disabilities may receive counseling at the e-mail address: akylbek.saktapov@kaznu.kz
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 the presence and activity of work in the audience (webinar); assessment of the completed task. The overall grade will be calculated as: $$\frac{BC1+MT+BC2}{3} \cdot 0,6 + FC \cdot 0,4,$$ where, BC – boundary control; MT – midterm; FC – final control (exam).

Grade	The digital equivalent	Range of scores (%)	Traditional system score
A	4,0	95-100	Excellent
A-	3,67	90-94	
B+	3,33	85-89	Good
B	3,0	80-84	
B-	2,67	75-79	
C+	2,33	70-74	
C	2,0	65-69	Satisfactory
C-	1,67	60-64	
D+	1,33	55-59	

	D-	1,0	50-54	
	FX	0,5	25-49	Fail
	F	0	0-24	

Calendar (schedule) the implementation of the course content:

Week	Topic title	LO	IA	Number of hours	Maximum score	Knowledge assessment form	Lesson form / platform
	Module 1.						
1	Lecture 1. Principles of Evidence-based medicine. Role of Evidence-based medicine in Public Health.	LO1	IA 1.1 IA 1.2	1			Zoom
	Seminar 1. Definition and principles of Evidence-based medicine. History of development and role of Evidence-based medicine in Public Health. World experience.	LO1	IA 1.1 IA 1.2	2	10	TT	Zoom
2	Lecture 2. 5-step process in Evidence-Based Practice. First step - Asking answerable clinical questions or a clinical problem by using the PICO principle. PICOT.	LO1	IA 1.1 IA 1.2	1			Zoom
	Seminar 2. 5-step process in Evidence-Based Practice. First step of EBM – Asking answerable clinical question or a clinical problem by using the PICO principle. Create a clinical example (task) on a given topic.	LO1	IA 1.1 IA 1.2	2	10	TT	Zoom
3	Lecture 3. Second step of EBM – Acquiring the highest quality evidence available by using the Internet and an Electronic Database.	LO1	IA 1.4 IA 1.5 IA 1.6	1			Zoom
	Seminar 3. Find information or evidence to answer question from the Internet and an Electronic Database. Database: Cochrane library, Trip Database, PubMed, Medline.	LO1	IA 1.4 IA 1.5 IA 1.6	2	10	TT	Zoom
	IWST 1. Consultation on IWS 1: Database organization in MS Access	LO1	IA 1.1 IA 1.2	2,3			Webinar / MS Teams
4	Lecture 4. Clinical trails' Procedures and Design.	LO1 LO2	IA 1.1 IA 1.2 IA 2.1 IA 2.2	1	10		Zoom

Week	Topic title	LO	IA	Number of hours	Maximum score	Knowledge assessment form	Lesson form / platform
	Seminar 4. Clinical trails' design: types, pyramid of evidence-based researches. Scope, interpretation of results, strength and limitation of Cross-Sectional, Cohort and Case-Control studies.	LO1 LO2	IA 1.1 IA 1.2 IA 2.1 IA 2.2	2	10	TT	Zoom
5	Lecture 5. Clinical trails' design.	LO1 LO2	IA 1.1 IA 1.2 IA 2.1 IA 2.2	1			Zoom
	Seminar 5. Clinical trials' design: Scope, Interpretation of results, strength and limitation of Randomized Clinical Trails.	LO1 LO2	IA 1.1 IA 1.2 IA 2.1 IA 2.2	2	10	TT	Zoom
	IWS1. Database organization in MS Access	LO1 LO2	IA 1.1 IA 1.2 IA 2.1 IA 2.2		50	IT	Moodle.kz
BC 1					100		
Module 2.							
6	Lecture 6. Diagnostic Test: sensitivity and specificity. Likelihood ratio and prognostic value (negative and positive).	LO1 LO2 LO3 LO4	IA 1.6 IA 2.2 IA 3.1 IA 4.1	1			Zoom
	Seminar 6. Estimation of sensitivity and specificity of tests in Clinical Trials. Prognostic value of a negative and positive result.	LO1 LO2 LO3 LO4	IA 1.6 IA 2.2 IA 3.1 IA 4.1	2	10	TT	Zoom
7	Lecture 7. The practical application of principles of Evidence-Based Medicine in diagnostic, etiological (risk assessment), prognostic and therapeutic purposes in medicine.	LO1 LO2 LO3 LO5	IA 1.6 IA 2.2 IA 3.3 IA 5.2	1			Zoom

Week	Topic title	LO	IA	Number of hours	Maximum score	Knowledge assessment form	Lesson form / platform
	Seminar 7. The practical application of principles of evidence-based medicine in diagnostic, etiological (risk assessment), prognostic and therapeutic purposes in medicine.	LO1 LO2 LO3 LO5	IA 1.6 IA 2.2 IA 3.3 IA 5.2	2	12	TT	Zoom
8	Lecture 8. Systematic review	LO1 LO3 LO4	IA 1.6 IA 3.3 IA 4.1	1			Zoom
	Seminar8. Definition and content of systematic review. Traditional literature review and systematic review. Evidence and weaknesses in systematic reviews.	LO1 LO3 LO4	IA 1.6 IA 3.3 IA 4.1	2	10	TT	Zoom
	IWST 2. Consultation on IWS 2	LO1 LO3 LO4	IA 1.6 IA 3.3 IA 4.1	2,3			Zoom
9	Lecture 9. Meta analysis.	LO1 LO3 LO4	IA 1.6 IA 3.3 IA 4.1	1			Zoom
	Seminar 9. Meaning of meta-analysis. Cochrane Collaboration. Cochrane library. Systematic and random errors.	LO4 LO5	IA 4.1 IA 4.2 IA 5.1 IA 5.2	2	10	TT	Zoom
10	Lecture 10. Grading of evidence and levels of recommendation.	LO3 LO4	IA 3.3 IA 4.1	1			Zoom
	Seminar10. Evidential value of various clinical trials' design. Classification of scientific research. The hierarchy of evidence. Levels of evidence: A, B, C, D. Classes of recommendations: I, II, II-a, II-b, III.	LO3 LO4	IA 3.3 IA 4.1	2	10	IT	Zoom
	IWS 2. Checking the distribution of a quantitative trait using statistical criteria in SPSS "(practical task)	LO3 LO4	IA 3.3 IA 4.1		50	IT	Moodle.kz
MT (Midterm Exam)					100		

Week	Topic title	LO	IA	Number of hours	Maximum score	Knowledge assessment form	Lesson form / platform
	Module 3.						
11	Lecture 11. Step 3 of EBM.	LO4 LO5	IA 4.1 IA 4.2 IA 5.1 IA 5.2	1			Zoom
	Seminar 11. Step 3 of EBM – Appraising the clinical relevance and validity of the evidence in the current clinical environment. Critical appraisal and analysis of scientific publications from the perspective of evidence-based medicine. Tools of evaluation.	LO3 LO4	3.3 4.1 4.2 4.3	2	10	TT	Zoom
12	Lecture 12. Steps 4 and 5 of EBM.	LO4 LO5	IA 4.1 IA 5.1 IA 5.2 IA 5.3	1			Zoom
	Seminar 12. Step 4 of EBM- Applying evidence-based interventions in the current clinical environment. Step 5 of EBM – Assessing the efficacy and utility of EBM practice.	LO4 LO5	IA 4.1 IA 5.1 IA 5.2 IA 5.3	2	10	TT	Zoom
	IWST 3. Consultation on IWS 3	LO4 LO5	IA 4.1 IA 5.1 IA 5.2 IA 5.3	2,3			Zoom
13	Lecture13. Clinical practical guidelines: definition, principles of development and using in Medicine.	LO4 LO5	IA 4.1 IA 4.2 IA 5.1 IA 5.2	1			Zoom
	Seminar 13. Principles of EBM in development of Clinical Practical guidelines and recommendations. Types of clinical practical guidelines. Requirement and stages of development of Clinical Practical Guidelines and Recommendations. Strength and limitation of Clinical Practical Guidelines.	LO4 LO5	IA 4.1 IA 5.1 IA 5.2 IA 5.3	2	10	TT	Zoom

Week	Topic title	LO	IA	Number of hours	Maximum score	Knowledge assessment form	Lesson form / platform
14	Lecture 14. AGREE system and evaluation of Clinical Practical Guideline.	LO5	IA 5.3 IA 5.4	1			Zoom
	Seminar 14. Evaluation of Clinical Practical Guideline with using AGREE system.	LO5	IA 5.3 IA 5.4	2	10	TT	Zoom
15	Lecture 15. Tests' sensitivity and specificity. Likelihood ratio and prognostic value (negative and positive).	LO5	IA 5.3 IA 5.4	1			Zoom
	Seminar 15. Estimation of sensitivity and specificity of tests in clinical trials. Prognostic value of a negative and positive result.	LO5	IA 5.3 IA 5.4	2	10	TT	Zoom
	IWS3.	LO5	IA 5.3 IA 5.4		50	IT	Moodle.kz
BC 2					100		

[Abbreviations: STQ – Self-Test Questions; TT – typical tasks; IT – individual task; T – test; BC – Boundary control]

Dean of the Faculty   Zh.A. Kalmatayeva

Chairman of the Faculty
Methodical Bureau   A.Y. Ualiyeva

Head of the Department   S.A. Mamyrbekova

Lecturer   A.K. Saktapov