

**SYLLABUS**  
**On Evidence-based Medicine for the Educational Program**  
**for the specialty: " 7M10102 Public Health"**  
**Autumn semester 2022-2023 ac.y.**

Cod of discipline	Name of discipline	Self-master student's work (SMW)	Кол-во кредитов			N. of credits	Self-master's work under Teacher's supervision (SMTS)
			Lecture (L)	Classes (C)	Lab work (LW)		
<b>EBM 5301</b>	Evidence-Based Medicine	196	15	30	-	5	14

**Academic information of course**

Education type	Course Type	Types of lecture	Types of classes	Form of final control
		educational		Case study
<b>Lecturer</b>	F.A.Iskakova			
<b>e-mail:</b>	Farida.iskakova@kaznu.edu.kz			
<b>Phone:</b>	+77011013086			
<b>An assistant of lecturer</b>				
<b>e-mail:</b>				
<b>Phone:</b>				

**Academic course presentation**

Aim of discipline	Expected learning outcomes (LO)* As a result of the discipline, the student will be able to:	Indicators of LO achievement (ID) (at least 2 indicators for each RO) student
Aim of discipline is to form in students a knowledge of principles Evidence-based medicine and skills and professional competencies for apply them into Clinical Practice..	1. Identify and define the concept of Evidence-Based Medicine	1. Use DM concepts in solving health care problems 2. Apply evidence-based principles to address diagnostic, etiological, prognostic, and therapeutic challenges of clinical medicine.
	2. Recognize the 5-step process in Evidence-Based Practice	1. Apply the DM steps to form a research question 2. conduct a search for information in evidence-based databases 3. apply critical appraisal of publications in terms of evidence-based findings
	3. Understand the key research methods needed to locate medical evidence	1. Distinguish between observational and experimental methods in publications 2. Use the distinction between descriptive and analytical methods in publications
	4. Distinguish between various levels of evidence and their corresponding clinical study categories	1. Plan the most evidence-based research methods for epidemiologic studies 2. Use a hierarchy of evidence-based methods to evaluate clinical diagnostic and treatment protocols for diseases.
	5. Appraise the evidence based on validity, reliability, and applicability	1. Use levels of evidence to analyze systematic reviews and meta-analyses 2. Apply evidence in the clinical setting
Prerequisites	Bio2215, OE3216	
Post-requisites	RBDONI6206, DM5208, EE530	
Literature and resource	<ol style="list-style-type: none"> <li>Trisha Trinhalk. Bases of Evidence-based Medicine, 2010.-222 p.</li> <li>Evidence-Based Medicine Guidelines. John Wiley &amp; Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England.- 2005.- 1343 p.</li> <li>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.</li> <li>Wolfgang, A. Handbook of Epidemiology. Vol.1//Ahrens Wolfgang, Peugeot Iris.- 2 ed.- Springer Reference, 2014.- 469 p.</li> </ol> <p>Recommended Reading:</p> <ol style="list-style-type: none"> <li>Key topics. Evidence-based medicine. D.P.V. MqGoverin, R.M. Valori, W.S.M.</li> </ol>	

Summerskill, M. Levi, 2001.-167 p.

6. 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.
7. KEY TOPICS IN EVIDENCE-BASED MEDICINE. Dermot P.B. McGovern, Roland M. Valori, William S.M. Summerskill, Marcel Levi, University of Amsterdam, The Netherlands, BIOS Scientific Publishers Limited, 2001.-167 p.
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 Guidelines/Duodecim Medical Publications Ltd, PO Box 713, 00101 Helsinki, Finland, 2000
10. International standards for clinical trial registries. 1.Clinical trials as topic - standards. 2.Registries – standards. I.WHO, 2012.-40 p.
11. Evidence-Based Medicine Guidelines. Editor in chief Ilkka Kunnamo. John Wiley & Sons Ltd, England.-1313 p.
12. AGREE tool <https://www.agreetrust.org/practice-guidelines/>
13. AGREE II Training Tools
14. The AGREE Reporting Checklist: a tool to improve reporting of clinical practice guidelines. BMJ 2016;352:i1152. doi: 10.1136/bmj.i1152.

Electronic sources:  
[www.who.org](http://www.who.org)  
[www.cdc.gov](http://www.cdc.gov)  
[www.medline](http://www.medline)  
[www.cockraine.library](http://www.cockraine.library)  
[www.PubMed](http://www.PubMed).  
[www.e-library.kz](http://www.e-library.kz)

Academic Policy of the Course in the Context of University Moral and Ethical Values	<p><b>Rules of Academic Conduct:</b>  Students are expected to attend class and be prepared to discuss reading material. Students who have 3 or more unexcused absences will receive a score of 0 for class participation. If IWS will passed a week later, it will be accepted, but the grade is reduced by 50%.</p> <p><b>Academic Values:</b>  Practical/laboratory classes, SRS must be independent, creative in nature. Plagiarism, forgery, use of cheat sheets, cheating at all stages of control are unacceptable.  Students with disabilities can get advice by phone and at <a href="mailto:vitaliy.kamhen@kaznu.edu.kz">vitaliy.kamhen@kaznu.edu.kz</a></p>																																												
Evaluation and Assessment Policy	<p><b>Criterion evaluation:</b> assessment of learning outcomes in relation to the descriptors (check the formation of competencies at the boundary control and examinations).  <b>Summative assessment:</b> evaluation of the activity of work in the classroom (on the webinar); evaluation of the completed task. The final grade for the discipline is calculated by the following formula:  <math>BC1+BC2/3*0.6 + \cdot 0.4</math>, where BC – boundary control; FC - final control (exam).</p> <p style="text-align: center;"><b>Student knowledge assessment table</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Grade by letter system</th> <th style="text-align: left;">Numerical equivalent</th> <th style="text-align: left;">Score (% content)</th> <th style="text-align: left;">Grade by traditional system</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4,0</td> <td>95-100</td> <td rowspan="2">Perfect</td> </tr> <tr> <td>A-</td> <td>3,67</td> <td>90-94</td> </tr> <tr> <td>B+</td> <td>3,33</td> <td>85-89</td> <td rowspan="2">Good</td> </tr> <tr> <td>B</td> <td>3,0</td> <td>80-84</td> </tr> <tr> <td>B-</td> <td>2,67</td> <td>75-79</td> <td rowspan="4">Satisfactory</td> </tr> <tr> <td>C+</td> <td>2,33</td> <td>70-74</td> </tr> <tr> <td>C</td> <td>2,0</td> <td>65-69</td> </tr> <tr> <td>C-</td> <td>1,67</td> <td>60-64</td> </tr> <tr> <td>D+</td> <td>1,33</td> <td>55-59</td> <td rowspan="4">Unsatisfactory</td> </tr> <tr> <td>D-</td> <td>1,0</td> <td>50-54</td> </tr> <tr> <td>FX</td> <td>0,5</td> <td>25-49</td> </tr> <tr> <td>F</td> <td>0</td> <td>0-24</td> </tr> </tbody> </table>	Grade by letter system	Numerical equivalent	Score (% content)	Grade by traditional system	A	4,0	95-100	Perfect	A-	3,67	90-94	B+	3,33	85-89	Good	B	3,0	80-84	B-	2,67	75-79	Satisfactory	C+	2,33	70-74	C	2,0	65-69	C-	1,67	60-64	D+	1,33	55-59	Unsatisfactory	D-	1,0	50-54	FX	0,5	25-49	F	0	0-24
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**Calendar (schedule) of the implementation of the content of the training course**

week	Title of the topic	Number of hours	Max.grade
<b>Module 1 Introduction to Epidemiology</b>			
1	<b>L 1</b> Principles of Evidence-based medicine. Evidence-based Practice.		
	<b>C 1.</b> Definition and principles of Evidence-based medicine. History of development and role of Evidence-based medicine in Public Health. World experience.	3	7
2	<b>L 2.</b> 5-step process in Evidence-Based Practice. First step - Asking answerable clinical questions or a clinical problem by using the PICO principle. PICOT.		
	<b>C 2.</b> 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.	3	7
	<b>SMTS1.</b> Consultation on the execution of the Preparation to SMW 1.	2,3	
3	<b>L 3.</b> Second step of EBM – Acquiring the highest quality evidence available by using the Internet and an Electronic Database.		
	<b>C 3.</b> Find information or evidence to answer question from the Internet and an Electronic Database. Database: Cochrane library, Trip Database, PubMed, Medline.	3	7
	<b>SMW 1.</b> Search for publications on the topic of the study in evidence databases.		40
4	<b>L 4</b> Clinical trails' Procedures and Design.		
	<b>C 4.</b> Clinical trails' design: types, pyramid of evidence-based researches. Scope, interpretation of results, strength and limitation of Cross-Sectional, Cohort and Case-Control studies.	3	7
	<b>SMTS 2.</b> Colloquium (quiz, test, project, essay, case study, etc.).	2,3	11
5	<b>L 5</b> Clinical trails' design: Randomized Controlled Trails and Non-Randomized Controlled Trials		
	<b>C 5.</b> Clinical trials' design: Scope, Interpretation of results, strength and limitation of Randomized Clinical Trails.	3	7
<b>Module 2 Basics of Biostatistics</b>			
6	<b>L 6</b> Diagnostic Test: sensitivity and specificity. Likelihood ratio and prognostic value (negative and positive).		
	<b>C 6.</b> Diagnostic and Screening tests. Sensitivity and specificity of the test. PPV and NPV indicators.	3	7
7	<b>L 7</b> The practical application of principles of Evidence-Based Medicine in diagnostic, etiological (risk assessment), prognostic and therapeutic purposes in medicine.		
	<b>C 7.</b> The practical application of principles of evidence-based medicine in diagnostic, etiological (risk assessment), prognostic and therapeutic purposes in medicine.	3	7
	<b>SMTS 3. Consultation on the execution of the SMW 2.</b>	2,3	
<b>BC 1</b>			100
8	<b>L 8</b> Systematic review.		
	<b>C 8.</b> Definition and content of systematic review. Traditional literature review and systematic review. Evidence and weaknesses in systematic reviews.	3	10
	<b>SMW 2.</b> Analysis a systematic review from the evidence databases.		50
9	<b>L 9</b> Meta analysis		
	<b>C 9.</b> Meaning of meta-analysis. Cochrane Collaboration. Cochrane library. Systematic and random errors.	3	10
10	<b>L 10 Grading of evidence and levels of recommendation</b>		
	<b>C 10.</b> 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..	3	10
	<b>SMTS 5.</b> Colloquium (quiz, test, project, essay, case study, etc.).	2,3	20
<b>Module 3 Advanced Biostatistics</b>			
11	<b>L 11</b> Step 3 of EBM.		
	<b>C 11.</b> 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.	3	
12	<b>L 12.</b> 4 and 5 steps of EBM		
	<b>C 12.</b> The 4 <sup>th</sup> step of EBM- Applying evidence-based interventions in the current clinical environment. The 5 <sup>th</sup> step 5 of EBM – Assessing the efficacy and utility of EBM practice.	3	10
	<b>SMTS 6.</b> Consultation of the execution CPC 3.	2,3	10
13	<b>L 13</b> Clinical practical guidelines: definition, principles of development and using in Medicine.		
	<b>C 13.</b> Principles of EBM in development of Clinical Practical guidelines and	3	10

	recommendations. Types of clinical practical guidelines. Requirement and stages of development of Clinical Practical Guidelines and Recommendations. Strength and limitation of Clinical Practical Guidelines.		
	<b>SMW 3</b> Analysis Clinical Practical Guideline using AGREE protocol.		50
<b>4</b>	<b>L 14</b> AGREE system and evaluation of Clinical Practical Guideline.		
	<b>C 14.</b> Evaluation of Clinical Practical Guideline with using AGREE system.	3	10
<b>15</b>	<b>L 15</b> Tests' sensitivity and specificity. Likelihood ratio and prognostic value (negative and positive).		
	<b>C 15.</b> Estimation of sensitivity and specificity of tests in clinical trials. Prognostic value of a negative and positive result.	3	10
	<b>SMTS 7.</b> Advice on preparing for exam questions.	2,3	
<b>BC 2</b>			100

**Dean** \_\_\_\_\_

**Head of Department** \_\_\_\_\_

**Lecturer** \_\_\_\_\_