

Al-Farabi Kazakh National University
Faculty Medicine and Health Care
Education program on specialty:
«8D101 Medicine»

Syllabus
«8D101 Medicine»
Autumn semester 2019-2020 ac.year

Code of course	Name of course	ISW	Number of hours/week			Number of credits	DIWT
			Lecture	Class	Lab		
SEMM 7302	Modern Epidemiologic methods in Medicine	98	1	2	0	5	7
Lecturer	Iskakova Farida Arkenovna MD, DMs KR, PhD RK, acting Associate Professor					Off /hours	On schedule
E-mail	E-mail: iskakovaf@gmail.com						
Telephone	Mob.: +7 701 101 3086					Classroom	6B
Academic Course Presentation	<p>Aim of discipline to form in PhD students a knowledge of modern epidemiologic methods, skills and professional competencies for application in Medicine and Clinical Practice.</p> <p>Upon completion of the course, the student will be able to</p> <ol style="list-style-type: none"> 1. Assess benefits and limitations of the design of epidemiological research methods. 2. analyze the population's incidence using epidemiological research methods. 3. apply descriptive methods (cross-sectional, environmental) to resolve clinical issues. 4. apply analytical methods (case-control, cohort) to resolve clinical issues. 5. Provide an expert assessment of the clinical trial: phases 1–4 using scientific articles published in the Cochrane Library, PubMed, Medline. 6. Draw up informed consent in accordance with the ethical principles of clinical trials. 						
Prerequisite and post requisite	Epidemiology, bases of Evidence-based Medicine, Biostatistics, Advanced Epidemiology						
Literature/source	<p>Required reading:</p> <ol style="list-style-type: none"> 1. Aschengrau A., Essentials of Epidemiology in Public Health, 3rd Edition, 2008 <p>Recommended reading:</p> <ol style="list-style-type: none"> 1. Gordis: Epidemiology, 5th Edition, Saunders 2013 2. Rothman K., Modern Epidemiology, 3rd Edition, 2008 3. Pickles A. Epidemiological Methods in Life Course Research, 1st Edition, 2007 4. Webb P and Bain C. Essential Epidemiology: An introduction for Students and Health Professionals. Second Edition. Cambridge University Press. 2011. 5. Wolfgang, A. Handbook of Epidemiology. Vol.1//Ahrens Wolfgang, Peugeot Iris. - 2 ed.- Springer Reference, 2014.- 469 p. 6. Principles and methods of Epidemiology. 3-d Edition. R. Dicker Ooffice of epidemiologic program CDC, USAID. -2012.-457 P. 						

	<p>7. Principles of Epidemiology in Public Health Practice. Third Edition. An introduction to Epidemiology and Biostatistics. US, CDC, Atlanta. -2012.-6-75 p.</p> <p>8. Hennekens, C., & Buring, J. (1987). Epidemiology in Medicine, Boston/Toronto: Little, Brown and Company.</p> <p>9. Kelsey, J., Whittemore, A., Evans, A. & Thompson, D. (1996). Methods in Observational Epidemiology, Second Edition, New York: Oxford University Press.</p> <p>Electronic source: www.who.org www.cdc.gov www.medline www.cochrane.library www.PubMed</p>
Academic policy of the course in the context of University ethical and moral values	<p>Rules of academic conduct: 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 be passed a week later, it will be accepted, but the grade is reduced by 50%</p> <p>Academic values: Seminars are to be carried out individually. Plagiarism, forgery, using of cheat sheets, cheating at all stages of knowledge control are unacceptable. Students with disabilities can receive counseling at E-mail: iskakovaf@gmail.com</p>
Assessment and Certification Policy	<p>Criterion based assessment provides by assess of result outcomes according to descriptors (verification of competency formation at midterm control and exams). Summative assessment: assess student's attending, class activity and task executing.</p>

Course Schedule

Week / Date	Topic	N of hours	Max.scores
	Module I. Introduction to modern epidemiologic studies.		
1/06.09.19	1 Lecture. Introduction to modern epidemiologic study in Medicine.	1	
1/06.09.19	Seminar 1. Definitions and relationship of Epidemiology and Clinical Epidemiology. Quantitative and Qualitative Epidemiology.	2	14
2/13.09.19	2 Lecture. Classification of Epidemiologic studies. Observational studies. Descriptive studies. Sampling.	1	
2/13.09.19	Seminar 2. Classification of Epidemiologic studies, using of systematization criteria. Observational research. General information of descriptive methods, general information: case study, case reports, case series.	2	14
3/20.09.19	3 Lecture. Descriptive studies: ecological and cross-sectional studies.	1	
3/20.09.19	Seminar 3. Descriptive studies: ecological and cross-sectional studies. Estimation of advantages and	2	14

	disadvantages. Using in Medicine. Measurement of associations.		
3/20.09.19	PhD SIWT. Consultation for masters independent work carry out on topics 1-3		
	PhD SIW 1. Essay and overview of articles on 1-3 class topics.		30
4/27.09.19	4 Lecture. Design and Planning of an epidemiological study.	1	
4/27.09.19	Seminar 4. Design and Planning of an epidemiological study: problem definition, scientific justification, protocol, design, measurement of associations of exposure to risk factors and disease outcomes, the effect of confounding factors and conclusion.	2	14
5/04.10.19	5 Lecture. Overview of observational descriptive studies	1	
5/04.10.19	Seminar 5. Overview of observational descriptive studies. Estimation of advantages and disadvantages. Choosing and using in Clinical Practice.	2	14
	MT 1		100
	Module II Analytical studies		
6/11.10.19	6 Lecture. Analytical studies. Case-control study.	1	
6/11.10.19	Seminar 6. Analytical studies. Case-control study: strength and limitations, measure association, using in Medicine. Practical work: analysis of case- control study using scientific articles from websites as an example.	2	14
7/18.10.19	7 Lecture. Analytical studies. Cohort study.	1	
7/18.10.19	Seminar 7. Analytical studies. Cohort study: strength and limitations, measure association, using in Medicine. Practical work: analysis of case- control study using scientific articles from websites as an example.	2	14
7/18.10.19	PhD SIWT 2. Consultation for masters' independent work carry out on topics 6-7. Text and graphic content, preparation Power Point Presentation.		
	PhD SIW 2. Analytical studies in Medicine.		15
8/25.10.19	8 Lecture. Evaluation and measurement of the occurrence of diseases. Measurement of expose in studies: RR, OR, AR, AR%, PAR, PAR%.		
8/25.10.19	Seminar 8. Evaluation and measurement of the occurrence of diseases. Measurement of expose in studies: RR, OR, AR. Practical work using scientific articles from websites as an example.		14
9/01.11.19	9 Lecture. Measures of association or measures of excess risk. OR, RR, AR, AR%, PAR, PAR%	1	
9/01.11.19	Seminar 9. Measures of association or measures of excess risk. OR, RR, AR. Practical work using scientific articles from websites as an example.	2	14
9/01.11.19	PhD SIWT 3. Consultation for masters' independent work carry out on topics 8-9.		
	PhD SIW 3. Exposure or outcome in epidemiologic studies.		15
10/08.11.19	10 Lecture. Bias and confounding factors in studies.	1	

10/08.11.19	Seminar 10. Bias and confounding factors in studies. Practical work using scientific articles from websites as an example.	2	14
.	Midterm exam.		100
.	Module III. Experimental studies		
11/15.11.19	11 Lecture. Experimental studies Experimental studies. Randomized controlled trial and non-randomized trial. Stratified, crossover, factorial design and group randomization.	1	
11/15.11.19	Seminar 11 Experimental studies Experimental studies. Randomized controlled trial and non-randomized trial. Stratified, crossover, factorial design and group randomization. Strength and limitations. Practical work using scientific articles from websites as an example.	2	14
12/22.11.19	12 Lecture. Design of clinical trials (phases, safety and effectiveness of drugs).	1	
12/22.11.19	Seminar 12. Design of clinical trials (phases, safety and effectiveness of drugs). Algorithm of clinical trial.	2	14
12/22.11.19	PhD SIWT 4. Consultation of masters' independent work carry out on topics 11-12.		
.	PhD SIW 4.Clinical Trial 1.		15
13/29.11.19	13 Lecture. Diagnostic and screening tests. Sensitivity and specificity of tests.	1	
13/29.11.19	Seminar 13. Diagnostic and screening tests. Sensitivity and specificity of tests.	2	14
14/06.12.19	14 Lecture. DEPTH model in Medicine. Implementation of epidemiologic studies in Medicine.	1	
14/06.12.19	Seminar 14. DEPTH model in Medicine. Implementation of epidemiologic studies in Medicine. Practical work using scientific articles from websites as an example.	2	14
14/06.12.19	PhD SIWT 5. Consultation of masters' independent work carry out on topics 13-14.		
.	PhD SIW 5. Clinical Trial 2.		15
15/.13.12.19	15 Lecture. Overview of Clinical Trial.Pyramid of evidence.	1	
15/13.12.19	Seminar 15. Overview of Clinical Trials. Discussion.	2	14
.	MT 3		100
.	Exam		100

Lecturer, MD, DMs KR, PhD RK
The Head of Department, PhD
Chairman of Methodical Bureau

F.A.Iskakova
S.A.Mamyrbekova
A.E. Ualiyeva

Class assessment criteria

	N	Criteria	12-14	9-11	6-8	0-5
			<i>Excellent</i>	<i>Good</i>	<i>Satisfied</i>	<i>Unsatisfied</i>
			<i>A</i>	<i>B</i>	<i>C</i>	<i>F</i>
Topic	1	Seminar 1. Definitions and relationship of Epidemiology and Clinical Epidemiology. Quantitative and Qualified Epidemiology.	1. The correct and complete answers to all theoretical questions are given; 2. The practical task is completely solved; 3. The material is set forth correctly with adherence to logical sequences; 4. It is demonstrated creative abilities.	1. The correct but incomplete answers to all theoretical questions are given and is admitted minor errors or inaccuracies; 2. The practical task is completed, however minor mistake made; 3. The material is set correctly in a logical sequence.	1. The answers to theoretical questions are given correctly but they are incomplete and inaccurate in the wording and are logical errors; 2. The practical task is not fully completed; 3. The material is presented correctly but logical sequence is broken.	1. Answers to theoretical questions contain gross errors; 2. The practical task is not completed; 3. The statement of the answer includes grammar and terminological mistakes, and logical sequence is broken.
	2	Seminar 2. Classification of Epidemiologic studies, using of systematization criteria. Observational research. General information of descriptive methods, general information: case study, case reports, case series.				
	3	Seminar 3. Descriptive studies: ecological and cross-sectional studies. Estimation of advantages and disadvantages. Using in Medicine. Measurement of associations.				
	4	Seminar 4. Planning and design of an epidemiological study: problem definition, scientific justification, protocol, design, measurement of associations of exposure to risk factors and disease outcomes, the effect of confounding factors and conclusion.				
	5	Seminar 5. Overview of observational descriptive studies. Estimation of				

		advantages and disadvantages. Choosing and using in Clinical Practice.				
6		Seminar 6. Analytical studies. Case-control study: strength and limitations, measure association, using in Medicine. Practical work: analysis of case- control study using scientific articles from websites as an example.				
7		Seminar 7. Analytical studies. Cohort study: strength and limitations, measure association, using in Medicine. Practical work: analysis of case- control study using scientific articles from websites as an example.				
8		Seminar 8. Exposure or outcome. Измерение рисков в исследовании: RR, OR, AR. Measurement of expose in studies: RR, OR, AR. Practical work using scientific articles from websites as an example.				
9		Seminar 9. Evaluation and measurement of the occurrence of diseases. Measurement of expose in studies: RR, OR, AR. Practical work using scientific articles from websites as an example.				
10		Seminar 10. Bias and confounding factors in studies. Practical work using scientific articles from websites as an example.				

11	Seminar 11. Experimental studies Experimental studies. Randomized controlled trial and non-randomized trial. Stratified, crossover, factorial design and group randomization. Strength and limitations. Practical work using scientific articles from websites as an example.				
12	Seminar 12. Design of clinical trials (phases, safety and effectiveness of drugs). Algorithm of clinical trial.				
13	Seminar 13. Diagnostic and laboratory tests. Sensitivity and specificity of tests.				
14	Seminar 14. DEPTH model in Medicine. Implementation of epidemiologic studies in Medicine. Practical work using scientific articles from websites as an example.				
15	Seminar 15. Overview of Clinical Trials. Discussion.				

Masters Independent Work Criteria

№	Темы занятий	13-15	10-12	7-9	0-3
		<i>Excellent</i>	<i>Good</i>	<i>Satisfied</i>	<i>Unsatisfied</i>
		A	B	C	F
1	1-4 Class topic	1. The correct and complete answers to	1. The correct but incomplete answers to all theoretical	1. The answers to theoretical questions are	

2	6-7 Class topic	all theoretical questions are given;	questions are given and is admitted	given correctly but they are incomplete and inaccurate in the wording and are logical errors;	1. Answers to theoretical questions contain gross errors;
3	8-9 Class topic	2. The practical task is completely solved;	minor errors or inaccuracies;	2. The practical task is not fully completed;	2. The practical task is not completed;
4	11-12 Class topic	3. The material is set forth correctly with adherence to logical sequences;	2. The practical task is completed, however minor mistake made;	3. The material is presented correctly but logical sequence is broken.	3. The statement of the answer includes grammar and terminological mistakes, and logical sequence is broken.
5	13-14 Class topic	4. It is demonstrated creative abilities.	3. The material is set correctly with adherence to logical sequence.		

Advising MIW. Schedule and Instructions

Week / Date	Topic	A maximum scores
3/20.09.19	MIWT1. Consultation on assignment 1.	
	MIW 1. Topic 1-4 classes	30
7/18.10.19	MIWT 2. Consultation on assignment 2.	
	MIW 2. Topic 6-7 classes	
9/01.11.19	MIWT 3. Consultation on assignment 3	15
	MIW 3. Topic 8-9 classes.	15
12/22.11.19	MIWT 4. Consultation on assignment 4	
	MIW 4. Topic 11-12 classes.	15
14/03.12.19	MIWT5. Consultation on assignment 5	
	MIT 5. Topic 13-14 classes.	15

