MINISTRY OF HIGH EDUCATION, SCIENCE AND INNOVATIONS
OF THE KYRGYZ REPUBLIC
OSH STATE UNIVERSITY
INTERNATIONAL MEDICAL FACULTY
DEPARTMENT OF NATURAL SCIENCES AND MATHEMATICS

Syllabus

Specialty (Program):	**General Medicine**	**Course Code:**	
Language of Instruction:	**English**	**Course Title:**	**Methods of Scientific and Clinical Research (MSCR)**
Academic Year:	**2025-2026**	**Number of Credits:**	**3**
Instructors:	**Aliia Bazieva, PhD Ainura Mitalipova, PhD Faizan Sidique, MD**	**Semester:**	**1/2**
E-Mail	**abazieva@oshsu.kg**	**Schedule:**	**https://myedu.oshsu.kg/#/teacherSchedules (Mon–Sat)**
Consultations:	**According to the schedule, rooms 409, 413**	**Location:**	**IMF, rooms 104, 409, 413**
Mode of Study:	**Full-time**	**Course Type:**	**B Elective course**

Osh, 2025

Course Description

The discipline 'Methods of Scientific and Clinical Research (MSCR)' is a university component within the professional cycle of the General Medicine curriculum.

Course Goals

To form students' understanding of science as a means of cognition and the foundation of medical development; to develop skills in searching, analyzing, and interpreting scientific information, and applying it in academic, research, and professional practice.

Course Objectives

- Develop knowledge of the fundamentals of organizing and conducting scientific research based on the principles of evidence-based medicine and scientific and medical ethics.
- Develop skills in finding answers to professional questions from scientific information sources, and in understanding, analyzing, and interpreting research results.
- Foster an interest in science, motivation for continuous learning, and self-development.

Lecture Plan

week #	Lecture topics	Lecture hours	points			
			Lecture participation	Tests or tasks in google classroom	notes	total
	1-модуль					
1.	Research Methodology: An Introduction https://youtu.be/GSeeyJVD0JU?si=qG-D6Yb9rUIaecvp	2	1	2	1	4
2.	Defining the Research Problem. https://youtu.be/QB6Fdw-LDiI?si=NUl9Jj1Q5uXRKl04 Medical Ethics, **ТК 1**	2	1	2	1	4
3.	Research Design https://youtu.be/IwJVnfw44SU?si=irhidPXJb5rJEW4g	2	1	2	1	4
4.	Sampling Design Process , Sampling Fundamentals https://youtu.be/xmlfzDJUgzA?si=xbvOdaF62HbLt1T5 https://youtu.be/G5pItsGsvyo?si=_xxaaXlDvY-0-gRK	2	1	2	1	4
5.	Measurement and Scaling Techniques, **ТК 2** https://youtu.be/LuBD49SFpWs?si=76V6_wYZHDS7-QWH	2	1	2	1	4
6.	Methods of Data Collection https://youtu.be/_zyN3Wa_a7c?si=af4E3TjpICJci16q	2	1	2	1	4
7.	Processing and Analysis of Data https://youtu.be/LBQqGKY2dJ0?si=1JjnJjqN1cdX0BsB	2	1	2	1	4
	Total hrs / average points	14	1	2	1	4

Plan for practical classes

№ week	Practical class topics	Class hrs	Points			
			Class partici pation	Tests or tasks in google classroom	notes	total
1st module						
1.	Research Methodology: An Introduction Task #1 Essay writing based on PubMed references	2	1	2	1	4
2.	Defining the Research Problem. Medical Ethics Task # 2 Informed Consent Form preparation)	2	1	2	1	4
3.	Research Design Task # 3 Literature Review (SCOPUS), Research Design Table	2	1	2	1	4
4.	Sampling Design Process Task # 4 Online Survey planning	2	1	2	1	4
5.	Measurement and Scaling Techniques Task #5 Online Survey Questionnaire prep.	2	1	2	1	4
6.	Methods of Data Collection Task #6 Online Survey Distribution, prep.ppt	2	1	2	1	4
7.	Processing and Analysis of Data Task # 7 Analyzing data1 and prep.poster	2	1	2	1	4
8.	Testing of Hypotheses (Parametric or Standard Tests of Hypotheses) Task # 8 Working on SPSS, STATA	2	1	2	1	4
	2-модуль					
9.	Manuscript Preparation Task # 9 ORCID registration, cover page prep., OshSU Journal Registration	2	1	2	1	4
10.	Manuscript Preparation Task # 10 IMRAD writing	2	1	2	1	4
11.	Task # 11 Manuscript Editing and Submission	2	1	2	1	4
	Total hrs / average points	**22**	**1**	**2**	**1**	**4**
	Exam					**50**

Course Policy

- Attendance is mandatory.
- Academic integrity: no plagiarism, no cheating.
- Deadlines: late work is penalized, missing work = no exam admission.
- Classroom behavior: respectful, no bullying, no texting in class.
- Conflict resolution: first with teacher, then program head if unresolved.

Students self-work topics

A. Physical Health of Students and Teachers (20 topics)

1. Impact of irregular sleep patterns on medical students' academic performance.
2. Relationship between physical activity and stress levels in students.
3. Ergonomic risks of prolonged gadget use among university teachers.
4. The role of diet in concentration and energy among medical students.
5. Prevalence of musculoskeletal pain in teachers using computers extensively.
6. Effects of screen time on eye health in students.
7. Vitamin D deficiency prevalence among students with indoor study habits.
8. Sleep quality among teachers and its link with teaching effectiveness.
9. Impact of commuting time on students' physical health and attendance.
10. Relationship between BMI and self-perceived academic performance in students.
11. Effect of hydration habits on students' exam performance.
12. Use of caffeine and energy drinks among medical students.
13. The relationship between sports participation and resilience to academic stress.
14. Prevalence of headaches and migraines in medical students during exams.
15. Physical activity patterns among teachers during the semester.
16. Correlation between smartphone addiction and physical inactivity in students.
17. Nutritional habits of students living in dormitories vs. at home.
18. Prevalence of chronic diseases (e.g., hypertension, diabetes) among faculty.
19. Role of physical exercise in burnout prevention for teachers.
20. Relationship between sleep deprivation and risk of accidents among students.

B. Mental Health of Students and Teachers (20 topics)

21. Prevalence of anxiety among medical students during exam periods.
22. Coping strategies of students facing academic stress.
23. Teacher burnout and its impact on student engagement.
24. Correlation between social media use and depression in students.
25. Relationship between mindfulness practice and exam performance.
26. Incidence of imposter syndrome among medical students.
27. Mental health differences between undergraduate and graduate students.
28. Stress levels among teachers adapting to online learning.
29. Link between academic workload and sleep disturbances in students.
30. Prevalence of depression among medical faculty members.
31. The role of peer support groups in students' stress reduction.
32. Academic procrastination and its association with anxiety.
33. Emotional resilience of teachers working under high administrative load.
34. Association between self-esteem and exam performance in students.
35. Correlation between perfectionism and burnout in medical students.
36. Teachers' mental well-being and classroom atmosphere.
37. Impact of financial worries on students' psychological health.
38. Relationship between social isolation and mental health of students.
39. Prevalence of suicidal ideation among stressed medical students.
40. Music therapy as a stress-relief tool for students.

C. Academic Performance and Learning (20 topics)

41. Correlation between attendance and exam results.
42. Effectiveness of group study vs. self-study in medical students.

43. Influence of class participation on overall academic performance.
44. Time management skills and academic success correlation.
45. Impact of sleep duration on memory retention.
46. Relationship between part-time jobs and students' grades.
47. Teachers' teaching styles and student academic performance.
48. The role of academic mentoring in student success.
49. Correlation between study hours and exam outcomes.
50. Effect of academic stress on memory recall.
51. Role of extracurricular activities in students' academic performance.
52. Relationship between classroom environment and learning outcomes.
53. Self-regulated learning strategies in high-performing students.
54. Differences in academic achievement between online and offline learning.
55. Impact of teacher feedback on student motivation.
56. Academic dishonesty prevalence and its predictors.
57. Influence of gender on academic achievement in medical school.
58. Effect of peer pressure on study habits.
59. The role of sleep hygiene in exam preparation.
60. Correlation between resilience and academic performance.

D. Financial State and Well-Being (20 topics)

61. Relationship between financial stress and academic success.
62. Coping strategies of students with financial difficulties.
63. The role of scholarships in improving student academic performance.
64. Association between part-time work and burnout in students.
65. Teacher salary satisfaction and job performance.
66. Financial literacy levels among medical students
67. Correlation between financial status and mental health.
68. Impact of tuition fees on student dropout rates.
69. Budgeting strategies of successful students.
70. Teachers' financial concerns and their link to stress.
71. Impact of family financial support on student outcomes.
72. Students' perceptions of financial inequality in education.
73. Relationship between financial stress and unhealthy eating habits.
74. Prevalence of loan debt among medical students.
75. Influence of economic background on access to learning resources.
76. Financial difficulties as predictors of academic procrastination.
77. Role of university stipends in student motivation.
78. Correlation between financial independence and self-esteem in students.
79. Association between material deprivation and health among students.
80. Effect of financial insecurity on attendance rates.

E. AI in Education and Health (20 topics)

81. Students' attitudes toward AI use in education.
82. Impact of AI-based learning platforms on student academic performance.
83. Teachers' acceptance of AI tools in teaching.
84. Relationship between AI use and time management efficiency.
85. The role of AI chatbots in reducing student stress.
86. Correlation between AI-assisted note-taking and exam results.
87. AI as a tool for detecting plagiarism in student assignments.
88. Teachers' concerns about AI replacing traditional teaching methods.
89. Relationship between AI learning apps and self-regulated learning.
90. Students' ethical concerns about AI in education.

91. The impact of AI-based assessment tools on academic honesty.
92. Perceived benefits of AI tutoring among struggling students.
93. Teachers' workload reduction using AI grading tools.
94. Effectiveness of AI-based language learning tools for medical English.
95. Students' trust levels in AI-generated study materials.
96. AI as a tool for identifying students at risk of failure.
97. Relationship between AI use and creativity in student projects.
98. Impact of AI on reducing inequality in access to education.
99. Students' perceptions of AI fairness in grading.
100. The role of AI in supporting teachers' mental health and burnout prevention.

Grading System

The grading is modular: 50 points for Module, and 50 points for the final exam. Minimum 30 points are required for exam admission.

1 module - **max 50** points
SSW/ SSWT.....8/8 Lectures, current knowledge control.....4*2=8 Practical classes, current knowledge control.....4*2=8 Intermediate knowledge assessment (M1).....18
Exam – 50 points

The minimum score for admission to the exam is 30.
The semester grade for the current assessment is calculated automatically, based on the average of the current assessments for the semester.

Grading System Table (English Translation)

Points	Letter Grade	GPA Equivalent	Traditional System Evaluation
93–100	A	4.00	Excellent
90–92	A–	3.75	Excellent
87–89	B+	3.50	Excellent
84–86	B	3.25	Good
81–83	B–	3.00	Good
78–80	C+	2.75	Good
74–77	C	2.50	Good
71–73	C–	2.25	Satisfactory
68–70	D+	2.00	Satisfactory
64–67	D	1.75	Satisfactory
61–63	D–	1.50	Satisfactory
31–60	FX	0.00	Unsatisfactory
0–30	F	0.00	Unsatisfactory
61–100	P	—	Pass

Points	Letter Grade	GPA Equivalent	Traditional System Evaluation
0–60	NP	Not counted in GPA	Fail
—	I	—	Did not fulfill all requirements for the discipline due to a valid reason
—	X	—	Student may be withdrawn from the course for academic or administrative reasons
—	W	—	Withdrawal: student's refusal to continue the course, officially confirmed

Educational Resources	
E-Resources (I)	1. Journal Quality Assessment Test – to avoid publishing in potentially predatory journals. ©Authors: Kairat Moldashev, Bulat Kenesov https://narxoz.edu.kz/journalcheck?fbclid=IwAR1Teiq-OvZna-tLF3OuurfX-TGki2sa0wCloz2uIgPNkSJStQ5IauRhxwI 2. SCOPUS – Electronic bibliographic and abstract database https://www.scopus.com/home.uri 3. SJR (Scimago Journal Rank) – Free electronic platform that collects information on indexed journals and ranks them according to authority https://www.scimagojr.com/index.php 4. PubMed – Electronic search system for biomedical research https://pubmed.ncbi.nlm.nih.gov/ 5. Web of Science – Paid electronic search platform combining multiple bibliographic and abstract databases https://clarivate.com/cis/solutions/web-of-science/ 6. Library of Congress (USA) – Electronic catalog http://catalog.loc.gov 7. New York Public Library – Electronic catalog http://catalog.nypl.org 8. British Library – Electronic catalog http://explore.bl.uk/primo_library/libweb/action/search.do 9. Bodleian Library (Oxford) – Electronic catalog http://www.bodleian.ox.ac.uk/bodley#search-in-catalogue 10. Harvard catalog http://library.harvard.edu. 11.https://www.coursera.org Educational web platform

General Resources (O)	1 Research methodology. Methods & technique : Kothari. C.R., 2nd edition, 2004, - 418 p. Https://drive.google.com/file/d/1463in52ult7bl9s4qtvxlx-xkf8ukv06/view?usp=sharing 2 Research methodology: tools and techniques dr. Prabhat Pandey dr. Meenu Mishra Pandey © bridge center, 2015 bridge center https://drive.google.com/file/d/1shn1ef-_wik8apmoqlq34nesujmvx8e7/view?usp=sharing 3 Research Methodology, Dr Meena Pandey, 2013 https://drive.google.com/file/d/1PH3y9SlvMPpBwq1B9PrtjkHf_xq2FDaT/view?usp=sharing 4 Designing clinical research, Stephen B. Hulley, md, mph 4th ed. 2013 https://drive.google.com/file/d/1eisnaaxzbgjhcvtgutzmxtezyekej_cd/view?usp=sharing **(Д-Дополнительная литература)** 1. Research Methods Handbook Introductory guide to research methods for social research. Stuart MacDonald & Nicola Headlam, CLES, 2019 https://drive.google.com/file/d/1X0g_jm8RluKEtHTyDXsoj-Q3_l3T_r4W/view?usp=sharing 2. Fundamental of research methodology and statistics by Yogesh Kumar Singh 2006 https://drive.google.com/file/d/1psfwqbrumw-l6pmk1pxeqijy3kwrzgoi/view?usp=sharing 3. Research Methods Creswell, John W., 2009 https://drive.google.com/file/d/1LsSrq8SIvMKtHD7Z5odHHTsHlUJclf4-/view?usp=sharing

GOOGLE CLASSROOM LINKS (JOIN to GC with your passport name)

GM 2

1st stream https://classroom.google.com/c/ODE4MTA1OTU2NDgy?cjc=lbczehbd

2nd stream https://classroom.google.com/c/ODE1NzA4ODE0NzEx?cjc=3urf6in2

3rd stream https://classroom.google.com/c/ODE4MTA1OTgyMzg2?cjc=xlzdr3hj