



ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA АКАДЕМИАСЫ «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 1 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

«APPROVED»
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 « 24 » 2022 y.



THE PROGRAM
 of the entrance exam for doctoral studies in educational programs
 «Medicine», «Public health»

Shymkent, 2022

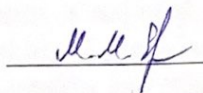
ONTÜSTİK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SKMA - 1979 -	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 2 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

The program of the entrance exam was compiled on the basis of the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604 «On approval of the state mandatory standards of education at all levels of education»

The program of the entrance exam was discussed at the meeting of the Scientific Committee on medicine

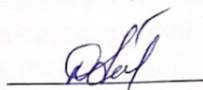
«21» «06» 2022 y., protocol № 3

Chairman of the Scientific
committee on medicine




M.M. Yesirkeпов

Secretary of the Scientific
committee on medicine



D.M. Otebay

Approved by the Scientific Council of the SKMA
Protocol № 5 «24» 06 2022 y.

ONTÜSTIK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казакстанская медицинская академия»
Scientific Committee on Medicine		
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		page 3 of 9

Introduction

The purpose of the educational program of doctoral studies in the specialties «Medicine», «Public Health» is to train competitive, competent scientific and pedagogical personnel with professional and scientific competencies and skills of implementation in practical and scientific activities to meet the needs of the system of science, education and healthcare.

In the conditions of improving the health care system, there is a need to master the knowledge and skills of managing the activities of medical organizations based on the achievements of modern science, clinical mentoring is being introduced and developed. A highly qualified doctor is required to possess not only professional qualities, but also knowledge and skills of analysis, monitoring, control of activities, transfer of knowledge to young specialists and students. The issues of integration of practice, science and education are being updated.

The educational program for the preparation of a Doctor of Philosophy (PhD) in the specialties «Medicine», «Public Health» has a scientific and pedagogical orientation and provides fundamental educational, methodological and research training and in-depth study of medical disciplines for the system of higher, postgraduate education and the research sector.


1. The purpose of the entrance exam: Identification of the knowledge and competencies necessary for the successful development of the educational program with the further application of the acquired knowledge in professional activities in the field of science, education and health.

2. The tasks of the entrance exam:

- Formation of students' ability to self-improvement and self-development, needs and skills of independent creative mastery of new knowledge throughout their active life;
- Formation and solution of modern scientific and practical problems, teaching at universities, successfully carrying out research and management activities;
- to know the current state and prospects for the development of the healthcare system in order to create new effective and safe methods of patient management and management;
- know modern research methods;
- to know the basics of pedagogy in higher education.
- possess management skills in a medical organization.

3. Name of disciplines and their main sections

- **Methodology of scientific research.** Methodology. Definition of science. The main stages of the development of science. Methods of scientific cognition.

ONTUSTIK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SKMA 1979	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 4 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

Methods and objectives of choosing the direction of scientific research. Requirements, methods and methods of theoretical and experimental research. Theoretical research. Applied research. Scientific and technical information. Information carriers. Information search.

- **Fundamentals of pedagogy of the Higher School of the Republic of Kazakhstan.** Education as a socio-cultural phenomenon. The education system of the Republic of Kazakhstan. Basic laws and institutions of the education system of the Republic of Kazakhstan. A comprehensive school in the education system. Continuing education and self-education as a means of personal development. Pedagogical activity: essence, structure, functions. The essence and structure of pedagogical activity. Types, levels and criteria for evaluating pedagogical activity. A teacher as a subject of pedagogical activity. Pedagogical interaction. Professional competence of the teacher. Higher School pedagogy is a branch of pedagogical science. The object and subject of this science, its leading tasks. The peculiarity of Higher School pedagogy as a science. Prospects for the development of Higher school pedagogy as a science. Axiological approach to the study of pedagogical phenomena.


- **Biostatistics.** Fundamentals of biostatistics. Selective approach. Fundamentals of biostatistics. Selective approach. The essence of biostatistics is to study the true nature of the phenomenon under study. The roles of F. Galton, R. Fisher and K. Pearson in the development of biometrics. Forms, goals and objectives of biostatistics. The main types of measuring scales used in biomedical research. Quantitative and qualitative signs. A graphical method for displaying statistical data. Reliability and reliability of measurements in biostatistics. Analysis of the application of statistical methods in articles and dissertation research. Population health statistics. Statistics of the healthcare system. Statistics of biomedical research.

- **The economic basis for the development of healthcare in the Republic of Kazakhstan.** The concept and definition of economics. Health economics, its main goal. Scientific and practical significance, the main directions of health economics. Indicators characterizing medical effectiveness. The Code of the Republic of Kazakhstan dated September 18, 2009 No. 193-IV «On the health of the people and the healthcare system». Kazakhstan's healthcare system: stages of formation and current state.


4. List of questions for the entrance exam

1. General fundamentals of pedagogy: basic concepts, methodology, objects and history of development.


2. The main directions and processes of higher education development in the modern world. A new model of education.

ONTÜSTIK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SKMA -1979-	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 5 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

3. The essence and structure of pedagogical activity. The personality of the teacher, professional abilities and qualifications.
4. The content and organization of the educational process.
5. Training quality management system.
6. Basic principles of the Bologna Process.
7. Regulatory and legislative framework for the development of higher education in the Republic of Kazakhstan.
8. Innovative teaching methods.
9. The Law of the Republic of Kazakhstan «On Education». The State program for the development of education in the Republic of Kazakhstan until 2025.
10. Organization and conduct of independent and research work of students.
11. Differentiated approach in teaching. Example.
12. The connection of pedagogy with other sciences.
13. Pedagogical research. Research methods in pedagogy.
14. Laws and regularities of the pedagogical process.
15. Didactic theories and concepts.
16. Modern educational paradigms.
17. The most important objective and subjective factors influencing the development of the content of education.
18. Theories of formal and material education and their one-sidedness.
19. The state educational standard of higher education, its structure.
20. The main components of higher education.
21. Development of higher education in the modern world.
22. Credit system of higher education.
23. Forms and methods of teaching in higher education.
24. University management.
25. Pedagogical communication.
26. Introduction to biostatistics. The subject and tasks of biostatistics.
27. Parametric methods. Applied criteria and their characteristics.
28. Nonparametric methods. Applied criteria and their characteristics.
29. Regression analysis.
30. Calculation of the sample for the study.
31. Average values: definition, types and methods of their calculation.
32. Correlation analysis: terms of use, example and interpretation of the value of the correlation coefficient with the formulation of the conclusion.
33. Assessment of the reliability of the results of the study: standard deviation, standard error of the mean, 95% confidence interval.
34. The concept of a variation series.
35. Types of variation series.
36. Descriptive research. Concept, application. Example.

ONTUSTIK KAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 6 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

37. Experimental studies. Concept, application. Example.
38. Data standardization methods, their application
39. Analysis of conjugacy tables using the Chi-square criterion: terms of use, application in practice, example and interpretation of the Chi-square value with the formulation of the conclusion by example.
40. Normal distribution: characteristic, verification criteria, three sigma rule
41. Mann-Whitney U-criterion
42. Confidence intervals. Concept, meaning, interpretation.
43. The method of standardized indicators
44. Elements of measurement theory
45. Measurement scales
46. Acceptable conversions.
47. Aggregated and integrated assessments.
48. Methods of comparison of statistical aggregates.
49. Methods of analyzing the dynamics of phenomena.
50. The use of computer statistical programs.
51. Meta-analysis.
52. Structure and content of scientific publications.
53. Choosing a research topic. The wording of the title of the work.
- Development of the research hypothesis.
54. Definition of the object and subject of research.
55. Definition of research objectives.
56. Working with literature. Problems of analysis, dissemination and use of scientific medical information.
57. Selection of the materials under study. The method of selecting patients to participate in a scientific study.
58. The choice of research methods.
59. Conducting research (collecting material).
60. Processing of research results. Formulation of conclusions.
61. Ethical principles of clinical research. Clinical trials.
62. Intellectual property protection in science.
63. Theoretical research.
64. Experimental studies.
65. Organization of the research process.
66. Methodology as a means of rationalization and optimization of activities.
67. Forms of organization of scientific knowledge.
68. Concepts, categories and structure of scientific research.
69. The relationship between theory and empiricism. Possibilities of confirmation and verification of the theory.
70. Classification of scientific research in healthcare.

ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SKMA - 1979 -	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 7 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

71. Application of environmental research in medicine.
72. Means and methods of scientific medical research.
73. Definitions of concepts: «science», «scientific research».
74. Requirements for scientific research in the field of medicine.
75. Forms and methods of scientific research.
76. Cost-effective medical technologies.
77. Economic evaluation of scientific innovations.
78. Transfer of medical technology.
79. Technology transfer in the Eurasian Economic Union (EAEU).
80. Decisions of the Eurasian Economic Union (EAEU) on states registering scientific products.
81. Commercialization of scientific projects.
82. Calculation of expenses of scientific projects.
83. Economic and legal foundations of international cooperation in the field of healthcare.
84. Sources of financing of scientific projects in the Republic of Kazakhstan.
85. Sources of financial support for the healthcare system.
86. Monitoring of financial flows in the healthcare system.
87. Economic problems of healthcare development in the Republic of Kazakhstan.
88. Features of healthcare financing in modern conditions.
89. Development of the healthcare financing system.
90. Cost-effective medical technologies.
91. The state and trends in the development of healthcare in Kazakhstan.
92. Analysis of the factors of competitiveness of health care of the Republic of Kazakhstan.
93. Assessment of the health capacity of Kazakhstan.
94. Development of human resources as a factor in improving the quality of medical services.
95. Improving the competitiveness of healthcare through improving the quality of life of the population.
96. Features of the development of health care models in world practice.
97. Theoretical aspects of competition and competitiveness of healthcare and factors determining it.
98. Methods of assessing the competitiveness of healthcare.
99. Improving the model of compulsory medical insurance in Kazakhstan.
100. The need for medical care and the demand for medical services.


5. List of recommended literature

Main:

1. Афонин И.Д. Психология и педагогика высшей школы - М.: Русайнс, 2018 - 256 стр.
2. Громкова М.Т. Педагогика высшей школы. Учебное пособие - М.: Юнити, 2017 - 80 стр.
3. Столяренко Л.Д. Психология и педагогика высшей школы. Учебник - Рн/Д: Феникс, 2014 - 336 стр.
4. Андреев Г.И. Основы научной работы и методология диссертационного исследования. М.: ФиС, 2012 - 296 стр.
5. Новиков А.М. Методология научного исследования - М.: Либриком, 2013 - 272 стр.
6. Постановление Правительства Республики Казахстан от 27 декабря 2019 года № 988 Об утверждении Государственной программы развития образования и науки Республики Казахстан на 2020 - 2025 годы
7. Яровинский М.Я. Лекции по курсу "Медицинская этика" (биоэтика) / М. Я. Яровинский. - М. : Медицина, 2004. - 527 с.
8. Применение методов статистического анализа (для изучения общественного здоровья и здравоохранения). Под редакцией чл.-корр. РАМН, проф. В.З. Кучеренко. Учебное пособие. – М., ГЭОТАР - Медиа, 2011.
9. Кодекс Республики Казахстан от 7 июля 2020 года № 360-VI ЗРК. О ЗДОРОВЬЕ НАРОДА И СИСТЕМЕ ЗДРАВООХРАНЕНИЯ
10. Новиков А.М., Новиков Д.А. Методология научного исследования. – М.: Либроком, 2010. – 280 с.
11. Послание Президента Республики Казахстан - Лидера нации Нурсултана Назарбаева народу Казахстана «Стратегия «Казахстан-2050»: новый политический курс состоявшегося государства»
12. О науке
Закон Республики Казахстан от 18 февраля 2011 года № 407-IV.
13. Об образовании
Закон Республики Казахстан от 27 июля 2007 года № 319-III.

Additional:

1. Громкова М.Т. Педагогика высшей школы. Учебное пособие - М.: Юнити, 2013 - 447 стр.
2. Шкляр М.Ф. Основы научных исследований. - М.: Издательство: Дашков и Ко, 2009. - 244 с.
3. Новиков А.М., Новиков Д.А. Методология научного исследования. – М.: Либроком, 2010. – 280 с.
4. Горленко О. А., Борбаць Н. М. Статистические методы в управлении качеством. Учебник и практикум для спо. М.: Юрайт, 2019. 270 с.

ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SKMA -1979-	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Scientific Committee on Medicine		page 9 of 9
The program of the entrance exam for doctoral studies in the educational programs «Medicine», «Public health»		

5. Горленко О. А., Борбаць Н. М. Статистические методы в управлении качеством. Учебник и практикум. М.: Юрайт, 2020. 306 с.

6. Горобец Б. С. Теория вероятностей, математическая статистика и элементы случайных процессов. Упрощенный курс. М.: Едиториал УРСС, 2020. 232 с.

7. Далингер В. А., Симонженков С. Д., Галюкшов Б. С. Теория вероятностей и математическая статистика с применением mathcad. Учебник и практикум для СПО. М.: Юрайт, 2018. 146 с.

8. Долгова В. Н., Медведева Т. Ю. Статистика. Учебник и практикум для СПО. М.: Юрайт, 2019. 246 с.

9. Долгова В. Н., Медведева Т. Ю. Теория статистики. Учебник и практикум для академического бакалавриата. М.: Юрайт, 2019. 246 с.