MEDICAL UNIVERSITY OF KARAGANDA

THE PROGRAM OF THE ENTRANCE EXAM TO THE DOCTORAL PROGRAM
8D10101 – NURSING SCIENCE
Direction of training: scientific and pedagogical, profile

KARAGANDA 2023

The program of the entrance exam to the doctoral program of the educational program 8D10101 "Nursing Science" is compiled on the basis of standard programs in the disciplines "Biostatistics", "History and Philosophy of Science".

The developers of the entrance exam program are the Department of Computer Science and Biostatistics, the Department of Biomedicine.

Reviewed and approved at the meeting of the Council of the Institute of Life Sciences

"12" 04. 2023 Protocol No. 6

Chairman of the Council _____ Klyuev D.A.

Approved at the meeting of the Senate of the NAO "MUK" "___" May 2023 Protocol No.__

1. The purpose of the entrance exam is to determine the level of compliance of applicants to the doctoral program 8D10101 "Nursing Science" with the criteria determined by the admission committee of the MUK in accordance with the requirements of the state mandatory standard of education.

2. Tasks
The entrance exam to the doctoral program consists of passing a test on the profile of the educational program "Nursing Science" and an interview.
The program of the entrance exam includes the fundamental topics of the disciplines "Biostatistics", "History and Philosophy of Science".

3. Dates of the event:
August of the current year

4. Content of the entrance exam program
The program of the entrance exam includes questions of the main sections of the following disciplines:

Discipline "Biological statistics"	
№	**Content of the discipline**
1	Descriptive statistical characteristics of random variables (mean, confidence interval of the mean, median, mode, variance, standard deviation, standard error of the mean, span, upper quartile, lower quartile, interquartile span, coefficient of variation, coefficient of asymmetry and kurtosis) Graphical representation of data (histogram, box with mustache, scatter plot, pie chart). Checking the distribution of a quantitative random variable. Parametric (Student's t-test for independent and dependent samples, one-factor, two-factor analysis of variance) and nonparametric (Mann Whitney's U-test, Wilcoxon's T-test, X2pirson, X2pirson with Yates correction, Fisher's exact criterion, McNemar's criterion,) criteria for testing statistical hypotheses. Correlation analysis (Pearson correlation coefficient, Spearman correlation coefficient). Regression analysis (simple and multiple linear regression).

Discipline "History and Philosophy of Science"	
№	**Content of the discipline**
1	Philosophy and methodology of science as a branch of philosophical knowledge. The main stages of the historical dynamics of science. The structure of scientific knowledge. Fundamentals of science. The scientific picture of the world. The dynamics of science as a process of obtaining new knowledge. The concept of scientific theory. Types of scientific theories are their conceptual features. The problem of differentiation of science and non-science. Verification and falsification criteria. Causes and forms of errors in cognition. Features of the modern stage of science development. Global scientific revolutions and the main types of scientific rationality. Science as a social institution.

5. Interview evaluation criteria
5.1. Level of motivation, leadership qualities, degree of interest in learning according to the chosen educational program (from 1 to 30 points)
5.2. The level of professional competence / experience / knowledge in the field of research, willingness to conduct research (from 1 to 60 points)

5.3. The level of English for communication in the professional community, participation in professional discussions, publication of research results (from 1 to 10 points)

6. The rules of the entrance exam
6.1. The entrance exam to the doctoral program is conducted in a computer format.
6.2. The duration of the entrance exam is 1 hour, during which the applicant passes a test in disciplines consisting of 100 questions. The list of questions is formed in random order.
6.3. The interview for doctoral studies is conducted on the basis of the Medical University of Karaganda.

7. List of recommended literature
Disicipline "Biological statistics":
basic:
1. Gerasimov A.N. Medical statistics studies.manual / A. N. Gerasimov. - M. : Med.inform. agency, 2007. - 480 p.
2. Bryan Kestenbaum «Epidemiology and Biostatistics. An Introduction to Clinical Research»: Springer. – 2009. - 242 p. (http://link.springer.com/book/10.1007%2F978-0-387-88433-2)
3. Mark Chang «Modern Issues and Methods in Biostatistics»: Springer. – 2011. - 307 p. (http://link.springer.com/book/10.1007%2F978-1-4419-9842-2)
4. http://www.biometrica.tomsk.ru / Website of biostatistics in medicine and biology
additional:
1. Biostatistics : a textbook / B. K. Koichubekov. - Almaty : New book, 2018. - 152 p.
2. Koichubekov, B. K. "Fundamentals of statistical analysis of biomedical data": Textbook-method.manual/KGMA; B.K. Koichubekov.-Karaganda: KSMAA, 2006. -52s.
3. Mathematical and statistical processing of medical research data : scientific edition / V. I. Junkerov, S. G. Grigoriev, M. V. Rezvantsev. - 3rd ed., supplement - St. Petersburg: VMedA, 2011. - 318 s
4. Informatics and medical statistics : textbook / ed. G. N. Tsarik. - M. : GEOTAR-Media, 2017. - 304 p
5. Petri, And "Visual statistics in medicine": Textbook.manual/A. Petri, K. Sabin; Translated from English-M.:GEOTAR-MED, 2nd edition of the translation. and additional, 2009.-144c
6. Kucherenko V.Z. "Application of statistical analysis methods for the study of public health and healthcare": Textbook / ed.Kucherenko, V.Z. - M. : GEOTAR-Media, 2007. - 256 p.
7. How to describe statistics in medicine: a guide for authors, editors and reviewers: trans. from English / T. A. Lang, M. Sesik. - M. : Practical Medicine, 2011. - 480 p.

Disicipline "History and Philosophy of Science":
1. Moiseev V.I. Philosophy of science. Philosophical problems of biology and medicine: textbook /V.I.Moiseev. - M.: GEOTAR-Media, 2015. - 592 p.
2. Khrustalev Yu.M. Philosophy of science and medicine: electr. textbook / Yu.M. Khrustalev - M.: GEOTAR-Media, 2009
3. Moiseev V.I. Philosophy of science: philosophical problems of biology and medicine: textbook for universities, V.I. Moiseev - M.: GEOTAR-Media, 2008 -560 p.
4. Khrustalev Yu.M. Philosophy of science and medicine: textbook for postgraduates and applicants / Yu.M. Khrustalev, G.I. Tsaregorodtsev - M.: GEOTAR-Media, 2007 - 512 p.
5. Trofimov V.K. V.K., Trofimov Philosophy, history and methodology of science: textbook Izhevsk, 2014. Electronic resource. Available at http://www.izhgsha.ra/img/UserFiles/File/Electron%20izdaniya/Philosofiya/Trofimov_UchPosob_2014.pdf
6. Gorokhov V.G. History and philosophy of science. Study guide. Electronic resource. Available at: http://newuc.jinr.ra/img_sections/file/Aspirant/Gprochov/GorokhovKonzeptziiFN2.pdf