

AL-FARABI KAZAKH NATIONAL UNIVERSITY
THE FACULTY OF PHILOSOPHY AND POLITICAL SCIENCE
DEPARTMENT OF GENERAL AND APPLIED PSYCHOLOGY

**FINAL EXAM PROGRAM
ON THE DISCIPLINE**

RESEARCH METHODS IN NEUROSCIENCE

**Educational program
8D03107 -Psychology**

5 Credit Hours

Fall (1) semester 2024 - 2025 academic year.

Teacher: Tazhina G.O.

PROGRAM

on the discipline

RESEARCH METHODS IN NEUROSCIENCE

Study topics submitted for the Final exam are the issues reflected in the course syllabus. The thematic content covers all types of works and is as follows: the topics of lectures, seminars, and assignments for students' independent work.

The Final exam is held in a Written form in the UNIVER system.

Learning outcomes.

As a result of studying the discipline, the PhD student will be able to:

- Explain basics of psychological research methods;
- Discuss methodology of empirical research in terms of Experimental Research Design;
- Categorize important research data analysis strategies regarding research questions;
- Recognize theoretical models for critical analysis of research in Experimental Research;
- Detect research goals and research questions;
- Argue the various options of theoretical research titles;
- Evaluate conclusions in empirical part of research;
- Apply communication and teamwork skills that enhance group research and scientific project;
- Identify the sides of the ethical debate in academic discussion with respect to academic honesty, integrity and independence.

Theme 1. Introduction to the field of management psychology.

What is Psychology of Management? Introduction to the nature of management psychology and related disciplines. Management psychology and other sciences.

Theme 1. Psychology and Science.

The nature and role of science in psychology.

Theme 2. Basic Concepts. Descriptive Statistics Review

Putting ethics into practice. Research Ethics

Theme 3. Statistical Relationships Between Variables. Correlational Research

C Statistical Relationships Between Variables orrelational research.

Theme 4. Correlation and Causation; Simple Experiments

Survey research. An APA-style reference list on a topic of the student's choosing.

Theme 5 Between-Subjects vs. Within-Subjects Experiments

Identifying research questions. Show to write summaries of what the research shows for the selected articles.

Theme 6. Quasi-Experiments; Internal and External Validity

Naturalistic observation.

Theme 7. Quasi-Experiments; Internal and External Validity (continuing)

Strategies for psychological measurement. Analyse natural-scientific preconditions of psychological studies

Theme 8. Complex Experiments.

Factorial Designs.

Theme 9. Single-Subject Research

A correlational study based on data from the online survey. Techniques for turning research ideas into empirical research questions and use those techniques to generate questions.

Theme 10. Case Studies and Qualitative Research

Studying cases.

Theme 11 Psychological Measurement

Making qualitative research. Define what a control condition is, explain its purpose in research on treatment effectiveness, and describe some alternative types of control conditions.

Theme 12. Reliability and Validity of Measurement

Reliability and validity, including the different types and how they are assessed.

Theme 13. Inferential Statistics; Null Hypothesis Testing.

Analysis of the basic logic of null hypothesis testing. Structure of the APA-style manuscript with abstract, introduction, methods, sampling, discussion, limitations, conclusions, in-text citations, references.

Theme 14. Specific Null Hypothesis Tests

Basic Null Hypothesis Tests Interpreting the results of simple, single-subject studies based on the visual inspection of graphed data.

Theme 15. Publication, Replication, Meta-Analysis, and Open Science

Open Access Journals in Psychology.

REQUIRED READING

Main:

1. Stanovich, K. E. (2019). How to think straight about psychology (11th ed.). Pearson.
2. Cognitive Psychology and Cognitive Neuroscience. Handbook (available in intranet system of KazNU). 2020
3. James W. Kalat Biological Psychology (available in intranet system of KazNU)
4. Stephen Grossberg The Link between Brain Learning, Attention, and Consciousness// Consciousness and Cognition 8, 1–44 (2019)
5. Jackson T. Brain: an illustrated history of neuroscience. M: 2020 (in Russian)

Additional:

1. Bellet, B. W., Jones, P. J., Meyersburg, C. A., Brenneman, M. M., Morehead, K. E., & McNally, R. J. (2020). Trigger warnings and resilience in college students: A replication and extension. *Journal of Experimental Psychology: Applied*, 26(4), 717-723. <http://dx.doi.org/10.1037/xap0000270>
2. Kamzanova A.T. Current trends in Psychology. Almaty, Kazak University 2017.

Research infrastructure

1. Rooms, equipment, and library located at the Faculty of Philosophy and Political Science
2. Rooms and Main library located at the the KazNU campus

Professional scientific databases

1. <https://elibrary.kaznu.kz/en/node/2718>
2. <https://rd.springer.com/>
3. <https://www.sciencedirect.com/>

e-resources

1. <http://elibrary.kaznu.kz/ru>
2. MOOC / video lectures, etc.
3. [Association for Psychological Science](#)
4. <https://www.psychology.org/resources/free-online-resources-for-psychology-students>

Software

1. IBM SPSS Statistics - Statistical Package for the Social Sciences