

AL-FARABI KAZAKH NATIONAL UNIVERSITY

**Approved
by the University Scientific-Methodical
Council Meeting
Protocol of the USMC № 6_
from 22 June 2020
Vice-Rector for Academic Affairs
_____ Khikmetov A.K.**

**PROGRAM
OF THE ENTRANCE EXAMINATION
FOR AN ENROLLEE
ON SPECIALTY 8D03107 – PSYCHOLOGY
DOCTORAL DEGREE**

ALMATY, 2020

The program was developed in accordance with the State General Educational Standard on the specialty "8D03107-Psychology". The authors of the program: professor* of the Department of General and Applied Psychology Kustubayeva A.M., Ph.D in Psychology, associated professor* of the Department of General and Applied Psychology Kamzanova A.T., Ph.D in Psychology

Considered and recommended at the chair meeting of General and Applied Psychology

On “ _____ ” _____ 2020 Protocol № _____

Head of the Chair _____ Madalieva Z.B.
(signature)

Recommended at the methodical Council (bureau of the faculty)

On « __ » _____ 2020 Protocol № _____

Chairman _____ Kabakova M. P.
(signature)

Approved at the Meeting of the Academic Council

On “ _____ ” _____ 2020, Protocol № _____

Chairman of the Academic Council, _____ Masalimova A.R.
Dean of the Faculty (signature)

CONTENT

1. AIM AND OBJECTIVES OF THE ENTRANCE EXAMINATION ON SPECIALTY «8D03107 - PSYCHOLOGY»

Entrance examinations are conducted on the specialty "6D050300-Psychology" doctoral degree with the scientific and pedagogical direction.

The conditions of competitive selection are determined by the al-Farabi Kazakh National University on the basis of the Typical Rules for Admission to Doctoral Studies and the State Standard of Education on the specialty "6D050300 - Psychology".

A master's degree diploma of postgraduate scientific and pedagogical education is necessary in order to continue education on doctoral degree.

The purpose of the entrance exams is to determine the level of knowledge, skills, abilities and competencies that are achieved in Master's program by enrollee in order to define overall enrollee's abilities to study in the doctoral program.

"The form of the entrance examination is a combined written and oral examination. A candidate after writing down their exam answers on the answer sheets will answer orally to the examination board. Written answer sheet will be revise in case of appeal.

2. REQUIREMENTS FOR ENROLLEE ON SPECIALTY “6D050300 – PSYCHOLOGY” DOCTORAL DEGREE

Applicants to the doctorate degree in the specialty "6D050300 - Psychology" should have the following competencies:

- To have modern knowledge about the development of modern science as a whole, the trends and directions of the development of psychological science;
- carry out a comparative analysis of the scientific schools of Kazakhstan and world psychology;
- analyze directions of international scientific activity in the field of psychological sciences;
- Able to analyze modern knowledge and ideas in psychological science, to demonstrate a systematic understanding of the field of study;
- To have a fundamental scientific psychological knowledge at an worldwide standards;
- To possess all the qualities of a modern scientist, freely oriented in the world scientific information;
- Critically analyze, evaluate and compare new and complex ideas in the main areas of psychological science;
- Able to analyze main branches in psychology as a science;
- Able to solve problems of information retrieval, be ready for self-education, personal and professional growth.

3. PREREQUISITES OF THE EDUCATIONAL PROGRAM

1. ISTRSP 5206 History, Condition, and Development Tendency of Modern

Psychology – 3 credits

2. SMSP 5301 Advanced Methods of Statistics in Psychology – 3 credits

3. IMO 5208 Research Methods and Expertise – 3 credits

4. LIST OF THE DISCIPLINES FOR THE PREPARATION ON THE EXAM

Discipline "History, Condition, and Development Tendency of Modern Psychology "

1. Subject, Tasks, Role and Place of The Discipline

General characteristics, role and place of the discipline "History, Condition, and Development Tendency of Modern Psychology" among other psychological disciplines. Subject and objectives of the course. The history of psychology as the logic basis of development modern psychological concepts. The connection between the history of psychology and current actual problems.

2. History of Psychology as a Reflection of Psychological Knowledge Structure

The history of psychological science as the evolution of ideas about the subject of psychology. The diversity of modern psychological schools as a reflection of the contradictions in the history of the development of Psychology. The logic and role of functioning of Psychology in the general process of human culture. Formation and development of ideas about consciousness as a subject of Psychology.

3. Requirements for the Scientific Method and Problems of Their Realization in the History of Psychology

The crisis of introspective psychology as the first crisis of natural scientific methodology in Psychology. The problem of "Sensation" and the academicism of Introspective Psychology. The problem of objectivity and criticism of the naturalistic approach to consciousness in Psychology. The problem of modeling objects of the Psychology and the subject of research.

4. Experiment and Formation of Scientific Psychology

Law and experiment in natural science. Proofs and denials in science. Self-observation in a laboratory experiment. "Immediate experience of consciousness" as an object of psychology. The concept of "stimulus errors" and the problem of introspection.

5. Origins and Development of Scientific Research in Behaviorism

Prehistory of Behaviorism. Functionalism by W. James and J. Dewey. R. Woodworth's "Dynamic Psychology" and E. Thorndike's Protobehaviorism. The natural and scientific basics of behaviorism in the works of I.M. Sechenov, V.M. Bekhterev and I.P. Pavlov. From J. Watson's "Radical Behaviorism" to B.Skinner's "Orthodox Behaviorism."

6. Origins and development of Gestalt Psychology

The idea of Integrity in the works of Socrates, Plato and Aristotle. The

manifestation of the idea of Wholeness in the "apperception" of W. Wundt and the "Deterministic Tendency" of N. Ah. "Gestalt" as a system-forming factor in perception and thinking. The problem of creative thinking in Gestalt Psychology.

7. Development of the Integrity Idea in the Works of K. Levin

Attempts to experimental study of mental processes genesis. The impossibility of a natural scientific presentation of studying processes and the problem of analyzing "nonclassical" situations in the researches of K. Levin. The problem of dialogue in experimental situations.

8. Psychoanalysis as a Practical Direction in the Development of Psychology

Historical background of the emergence of Psychoanalysis. The role and significance of S. Freud's personality in the development of psychoanalysis. Development of ideas about the structure of the psychic in the concept of S. Freud. The method of free associations and its importance for the formation and development of psychoanalysis. Psychoanalysis as a unity of research and psychotherapeutic methods. Neo-Freudianism and the development trends of psychotherapeutic procedures within the framework of psychoanalysis.

9. History, condition and development trends of cognitive psychology

General characteristics of cognitive processes as different levels of information processing. Specific features of information processing distortion in the subsystems "sensation and perception," "memory and thinking." Cognitive processes as different types of activities. Subjectivity as a result of functioning various types of cognitive activity.

10. Development of Vygotsky's ideas in the Psychology of the 20th century

The social determination of the psyche as a philosophical problem and the phenomenon of experimental research. The problem of psych objectifying by the instruments. L.S. Vygotsky's nonclassical approach to the classical problems of Psychology. "Human Higher Mental Functions" and studying their genesis. "Development" as an unnatural process, containing an artificial component of psycho-technical action with the use of iconic means. The problem of units of analysis in Cultural-Historical Psychology.

11. Historical Preconditions and Epistemology of the System-Activity Approach in Psychology

The role of L.V. Vygotsky's Cultural-Historical Concept in the formation of the system-activity approach in Psychology. The principle of unity of consciousness and activity of S.L. Rubinshtein as the basis of a new approach to the analysis of mental phenomena. The principle of objectivity and the principle of development as the most important components of the activity approach in Psychology.

12. Development of the General Psychological Concept of Activity

From the "Entelechy" of Aristotle to the category of Activity. A.N. Leontiev's school and semantic of psychological thought. Modern approaches to the analysis of Activity. Activity as an object of Psychology and as a category of psychological

science. The ideas of A.N. Leontiev and his school about the act as a unit of analysis of Personality.

13. Development of the Activity Concept of Consciousness and Personality

Individual consciousness as a system of realities. The tasks of experimental research of individual consciousness. Development of the activity approach in the Psychology of Thinking. The problem of meaningful action. Interrelation of system qualities and characteristics of activity.

14. Problems of the System-Activity Analysis of Cognitive Processes

Activity as a system-forming factor in the system of cognitive processes. Structure of perceptual activity. Features of memory as mnemonic activity. Speech, thinking and imagination as special activities. Cognitive activity as a special psychological system. The A.N. Leontiev's psychological theory of Activity and the humanization of education. Stages of cognitive activity development in ontogenesis.

15. New Explanatory Possibilities of the Activity Approach

"Excessive activity" of personality as a problem of general and social psychology. Psychological mechanisms of excessive activity development. Varieties of excessive activity manifestations. Excessive activity as a result of the system of semantic entities functioning. Formation of primary abilities as a result of the functioning of joint activities.

16. Realization of Basic Requirements of the Natural Science Method in the Behavioristic Experiment

Structure of the experiment. The concept of a problem situation and its organization. Reaction to a problem situation as externally observed behavior. Contradiction of the experimental data and the theoretical scheme of behaviorists: Tolman's experiments. The state and development of neobehaviorism. Formation and development of behavioral psychotherapy.

17. The problem of Creative Thinking in Gestalt Psychology

The concept of a "Phenomenal Field". Ideas of the method "Reasoning by Speaking". Development of ideas of "solving the problem" in the works of K. Duncker. Dialogue in the dyad between "subject-experimenter" as a unit of analysis of the process of solving the problem. The problem of describing the nonclassical situation in Duncker's studies. Gestalt psychology as the basis of Gestalt therapy development.

18. Personality as an Integrator of Subjectivity

Subjectivity as a result of the functioning of various types of cognitive activity. Manifestations of subjectivity in the process of cognitive processing information. Solving of problems of subjectivity in the process of cognitive activity. Formation and development of cognitive psychotherapy.

19. The Conceptual Mechanism of the Activity Approach

Modern ideas about category of "Activity". Status of the concept of "Activity". External and internal system-forming factors of Activity. Structure of Activity and the problem of development of activities. Sense formation, motives formation and goal formation as system-forming factors.

20. Psychological Analysis of Activities as a System.

Activity as a form of active relationship between subject of activity and environment. Operational, cognitive and intimate-personal units of psychological analysis of Activity. Problems of formation of an information basis of Activity.

21. Pseudo-Individual Activity as a Form of Manifestation of Excessive Activity.

Joint activity as an initial condition for converting makings in ability. Formation of primary abilities as a result of joint activities functioning. Individual activity is an empirical indicator of the completeness of the process of forming abilities. Joint Individual Activity as a condition for improving abilities. The development of individual joint activities and formation of talent. Psychological problems of giftedness and talent.

22. The problem of Modeling the Object and the Subject of Research.

Empirical knowledge and knowledge from the system of theory. The problem of operational definitions in science and the problem of measurement. The structure of theoretical concepts as a reflection of the history of psychology development.

23. A.N. Leontiev's Psychological Theory of the Activity

Stages of development of cognitive activity in ontogenesis. Communication as a system-forming factor at various stages of development of cognitive activity. The general fund of semantic formations as a condition for the development of cognitive activity. Joint-dialogic cognitive activity as a system-forming factor of the learning process.

24. The problem of dialogicality of experimental situations

Modeling of pseudo-dialogic and pseudo-joint forms in various experimental situations. Inclusion of the experimenter in the structure of the experiment situation and its situational management of it by laws of gestalt. From "integrity" to "objectivity" and "valence".

25. The Concept of a Problem Situation and its Organization

Reaction to a problem situation as externally observed behavior. The Concept of a Problem Situation and psychological experiments. Role of the Concept of a Problem Situation in Psychology.

Discipline "Advanced Methods of Statistics in Psychology"

1. Basic Concepts of Modern Statistics

Measuring scales. Nominal scale (scale of names). Ordinal (rank, ordinary scale). Ranking rules. Checking the correctness of the ranking. The case of identical ranks. Scale of intervals. Scale of relations. General population. Sample. Design of psychological research.

2. Dependent and Independent Samples

Requirements for the sample. Representative sampling. Formation and scope of a representative sample. Grouping. Statistical tables. Statistical series: variational series, regression series and series of ranked values of characteristics. Frequency range and histogram. The concept of distribution. Data Processing.

3. Descriptive Statistics

Descriptive statistics and experiment. Procedures and grouping data by their values, building frequency distribution, identifying central distribution trends (the average arithmetic), estimating the spread of data and central trend found. Grouping of data. Frequency distribution. Bar chart. The curve of the normal distribution. Assessment of the central tendency. Bimodal distribution. Median. The arithmetic mean. Mean Deviation. A variation. Standard deviation.

4. Inductive statistics

Inductive statistics and samples. Testing of hypotheses. The null hypothesis (H₀). Alternative hypothesis. Levels of significance. Probability threshold. Parametric methods: T-test; Degrees of freedom; Number of degrees of freedom; T-test for dependent samples; Dispersion analysis. Nonparametric methods: The χ^2 method (chi-square); Theoretical frequencies (T); Criterion of signs (binomial criterion). Other nonparametric criteria: a criterion of rank; Test U (Manna-Whitney); Test T Wilcoxon.

5. Measures of Position, Variability and Central Tendency

Measures of the central tendency. Median. Average. The choice of the measure of the central tendency. Measures of position. Distribution chambers. Measures of variability. Dispersion. Standard deviation. Asymmetry. Excess. Degree of freedom. Processing data on a computer

6. Basic Concepts of the Theory of Testing of Statistical Hypotheses.

Hypothesis (scientific and statistical). Zero and alternative hypotheses. Directional and non-directional hypotheses. Statistical criterion for testing the null hypothesis. Power of criterion. The observed value of the criterion. Critical area. Area of acceptance of the hypothesis. Critical points. The concept of the level of statistical significance. Stages of making a statistical decision. Classification of psychological problems solved using statistical methods.

7. Parametric Criteria

T-test for one sample. T-test for independent sample. Criterion of Fisher. Processing on the computer. Normal Distribution and its role in parametric criteria.

8. Nonparametric Criteria

Comparison of two independent samples: the U-Mann-Whitney test. Comparison of two dependent samples: T-Wilcoxon test. Comparison of more than two independent samples. Comparison of more than two dependent samples: the χ^2 -Friedman criterion. Q-criterion of Rosenbaum. G-criterion of signs. L-criterion of Page's tendencies. Pearson's criterion. The Kolmogorov-Smirnov test. Processing on the computer.

9. Coefficients of correlation

The concept of correlation. Pearson's correlation coefficient. Correlation, and regression. Rank correlations: Spearman, Kendall. Correlation of binary data. The magnitude of the correlation and the strength of the connection. Emissions and deviations of distributions from normality. The influence of the "third" variable. Nonlinear connections. The choice of the correlation coefficient.

10. Correlation Analysis

Role of Correlation Analysis in psychological research. Relationship between Correlation Analysis and design of experiment. Correlation Analysis in current psychology.

11. Regression Analysis

Linear regression. Multiple linear regression. Estimation of significance levels of coefficients of the regression equation. Nonlinear regression. Processing on the computer.

12. Factor Analysis

Analysis of the main components of factor analysis. Sequence of factor analysis. The problem of the number of factors. The problem of generality. The problem of rotation and interpretation. The problem of estimating factors values. Using factor analysis in psychology. Processing on a computer.

13. Dispersion Analysis.

Purpose and general concepts of ANOVA. One-way ANOVA. Variance analysis. Criterion of Link and Wallace. Multiple comparisons in ANOVA. Multifactorial ANOVA. ANOVA with repeated measure. Multidimensional ANOVA (MANOVA). Processing on a computer

14. Cluster Analysis.

Methods of cluster analysis. Cluster analysis of objects. Cluster analysis of sociometry results. Processing on a computer: cluster analysis of differences.

15. Computer Programs on Statistical Methods of Analysis

History of the SPSS program. Data preparation. Frequency analysis. Data selection. Data modification. Statistical characteristics. Research data. Contingency tables. Analysis of multiple responses. Comparison of means. Nonparametric tests. Correlations. Regression analysis. Dispersion analysis. Discriminant analysis. Factor analysis. Cluster analysis. Standard graphics.

15. Reliability Analysis.

Purpose of the method. Coefficient alpha. Half-cleavage reliability. Processing on the computer.

Дисциплина «Research Methods and Expertise»

1. Methodology and Empirical Psychological Research

Definition of science, theory, methodology, method and methodology. Methodological principles of Experimental Psychology. The scientific method of research, its basic standards: standards for planning and conducting research, standards of scientific thinking.

2. Structure of the Scientific Theory

Types of theories: by construction (axiomatic and hypothetical-deductive), in the form of organization (qualitative, formalized, formal). Scientific theory and hypotheses. Correlation of empirical and scientific facts. The main scientific methods of research and types of its validity. Theoretical methods of research and its differences from other scientific methods. Theoretical and speculative methods. Practical ethics and practical psychology as a professional activity.

3. Scientific Research and Standards of Scientific Thinking.

The concept of science. The truth is absolute and relative. An empirical study. Theoretical study. Classification of scientific research on the purpose: search, critical, clarifying, reproducing. Methodological problems of Experimental Psychology: the problem of interpreting experimental data, the problem of reproducing the results.

4. Paradigm of Scientific Research

Basic provisions of the paradigm of modern natural science. Advantages and disadvantages of the natural science paradigm. Advantages and disadvantages of the humanitarian paradigm. Integral-eclectic approach to the construction of scientific research.

5. Experimental Method in Psychological Research

Historical background of experimental method in psychology. Experiment and formation of scientific psychology. Criteria of the experimental method proposed by W. Wundt. The problem of constructing an objective method of empirical psychological research (G. Ebbinghaus). The first experimental studies (S. Hall, D. Cattell, P. Janet, A. Binet, etc.).

6. Experiment and its difference from observation.

Types of psychological experiment: laboratory (classical, psychometry), natural, psychological-pedagogical (ascertaining, forming). Experiment as the manipulation of variables (J. Campbell). Signs of experimental psychological research (RS Nemov).

7. Organization of a Psychological Experiment

The concept of the problem of scientific psychological research. Stages of highlighting the scientific problem (V.N. Druzhinin). The concept of the object and the subject of research. Determination of the purpose and objectives of the study.

8. Variables in the Psychological Experiment and Their Measurement

The concept of measurement in psychology. Classification of psychological measurements by SS. Papovyan. Dependent and independent variables. Relations between variables.

9. Types of Functional Dependencies and Relationships of Variables

Psychological scaling. Scales of measurement of variables (S. Stevens). Measurements in psychophysics. Psychophysical laws. The concept of the method of psychological measurements. The main characteristics of the method of measurement in psychology. Psychophysical experiment.

10. Experimenter and Behavior of Participants of Psychological Research

Experiments with individual subjects and groups. Forming a sample of research, three criteria for its formation. Ensure that the sample is representative. Requirements for the sample size. Randomization as a way to control "sampling effects".

11. Registration of Research Results

Control of the conclusion as the final stage of experimental testing of psychological hypothesis. Statistical conclusions and psychological hypothesis.

12. Generalization of Research Results

The problem of generalization of results: in relation to objects, biological characteristics, socio-cultural characteristics, research conditions, to different

experimenters. Interaction of secondary variables as sources of artifact conclusions by D. Campbell.

13. Experiment and its Organization in Various Branches of Psychological Science

Scheme of the structural-methodological analysis of psychological experiments. Experiments in general psychology and psychophysiology. Researcher and experiment. Types of experiments in Psychology. Experiments in the Age Psychology. Experiments in the Social Psychology (experiments of Milgram, the experiments of Philip D. Zimbardo - Stanford prison experiment).

14. Experimental Studies of Personality and Group

Experimental study of personality. Methods of personality study in the experiments of K. Levin and his collaborators. Investigation of personality-motivational sphere (K. Levin). Study of child's personality using direct methods.

15. Psychological Experiment and Their Measurement

Classification of independent variables by D. Campbell: controlled variables, relatively constant aspects of the environment, tested or pre-measured variables. Control of variables. Managing variables in a psychological experiment.

16. Behavior of Participants

Experimenter and Participants in experiment. The main factors of communication between the experimenter and participants, which can distort the results of the experiment (S. Rosenzweig).

17. Ethics of Psychological Experiment

Ethical principles of the psychologist. Competence, honesty of the experimenter, concern for the well-being of others. Ethical principles of research involving people. Participation in research of children and minors. Use animals in research and care for them. Social responsibility. Personal and research responsibility.

18. Experimental Procedure and Collection of Empirical Data

Role of design of experiment in collection of empirical data. Development of experimental materials. Equipment and stimulus material. Instructions and postexperimental interview. Experimental protocols and experimental journal.

19. Correlation Study in Psychology

The concept of correlation research. Areas of application of correlation research. Variables in correlation research. Possible interpretations of correlation relationships between variables. The main types of correlation research: simple, comparative, structural. Strategies for the formation of groups in comparative correlation studies.

20. Presentation of Research Results

Basic forms of scientific presentations. Structure of the experimental report. Academic style of writing in scientific psychological texts.

21. Statement of the problem in Experiment

Types of hypotheses tested in psychological experiments. Theoretical, empirical and statistical hypotheses. Experimental hypotheses, counter-hypotheses and competing hypotheses. The concept of operationalization of constructs. The

main sources of scientific problems. Observation and introspection. Experiments described in the literature. Professional communication.

22. Methodological Foundations of Scientific Psychological Research

Science as a system of knowledge and as an activity. The concept of a paradigm. Development and destruction of paradigms in the course of the development of science. Inductive and hypothetical-deductive methods of scientific cognition. Theory, construct, hypothesis, methodology. Principles of verification and falsification of the theory. Level of generality of the theory.

23. Experiments in General Psychology and Psychophysiology

Scheme of the structural-methodological analysis of psychological experiments. Experiments in general psychology and psychophysiology. Experiments in the age psychology. Experiments in social psychology.

24. The Scientific Method of Research and its Basic Standards

The scientific method of research, its basic standards: standards for planning and conducting research, standards of scientific thinking. Correlation of empirical and scientific facts. The main scientific methods of research and types of its validity. Theoretical methods of research. Differences from other scientific methods on the result.

25. Carrying out a Psychological Experiment

The concept of the relevance of the research, the theoretical and practical significance of its results. Substantial planning and choice of the type of experiment as the main logical scheme of experimental psychological research.

5. LIST OF RECOMMENDED LITERATURE

History, Condition, and Development Tendency of Modern Psychology

List of Bibliography

Basic:

1. Fancher, R.E.(1996). *Pioneers of psychology* (3rd edn). New York: Norton.
2. Miller, G. (1966). *Psychology: the science of mental life*. London: Penguin.
3. Benjamin, L.T. (1996). *A history of psychology*. New York: McGraw-Hill.
4. Jones, D., & Elcock, J. (2001). *History and theories of psychology: a critical perspective*. London: Arnold.

Additional:

1. Abd al-Rahman al Naqib (1993). *Ibn Sina. Prospects: The Quarterly Review of Comparative Education*. XXIII, 1 &2. vol. 93. 53-69.
2. Bruner, J. (1960). *The process of education*. Boston: Wiley.
3. Christensen, L. (1988). *Experimental Methodology*. San Francisco: Wiley.
4. Dewey, J. (1922). *Human Nature and Conduct*. New York: Henry Holt and Company.
5. *History of Psychology: A TimeLine of psychological ideas* (2006). Marcos Emanuel Pereira Universidade Federal da Bahia, Brazil.
6. Hunt, M. (1993). *The Story of Psychology*, New York: MacMillan.

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9. Levin, J. (2004). Functionalism. Stanford Encyclopaedia of Philosophy. <http://plato.stanford.edu/entries/functionalism/>
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11. Wade, C. & Tavris, C. (2002). Psychology (7th ed.). Upper Saddle River, NJ: Prentice Hall.
12. Wagner, K (2008). What is cognition? About.com: Psychology. The New York Times Company.

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2. Вероятность и математическая статистика. Энциклопедия / Гл. ред. Ю.В.Прохоров.— М.: Изд-во «Большая Российская Энциклопедия», 2013.
3. Сидоренко Е.В. Методы математической обработки в психологии. С-П, 2014, 350 с.
4. Глас Дж., Стенли Дж. Статистические методы в педагогике и психологии. М.: Прогресс, 2006
5. Захаров В.П. Применение математических методов в социально-психологических исследованиях. Л: ЛГУ, 2013
6. Суходольский Г.В. Основы математической статистики для психологов. Л.: ЛГУ, 2002, 420 с.

Additional:

1. Акчурин И.А., Веденов М.Ф., Сачков Ю.В. О методологических проблемах математического моделирования в биологии. – В кн.: Математическое моделирование жизненных процессов. М.: Мысль, 2008, с. 7-44.
2. Амосов Н.М. Моделирование сложных систем. Киев: Наук. думка, 2008. 88 с.
3. Аткинсон Р., Бауэр Г., Кротерс Э. Введение в математическую теорию обучения. М.: Мысль, 2013. 486 с.
4. Брушлинский А.В. Основные проблемы и перспективы математизации психологии мышления. – Вопр. психологии, 2011, № 1, с. 3-11.
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9. Глинский, Б.А. Моделирование как метод научного исследования / Б.А. Глинский, Б.С. Грязнов, Б.С. Дынин. - М., 2005.
10. Никандров, В.В. Метод моделирования в психологии: учеб. пособие / В.В. Никандров. - СПб. : Речь, 2003. - 55 с.
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14. Тихомиров О.К. Психология мышления. М., 1984
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16. Хомский Н. Язык и мышление. - М., 1972
17. Хомский Н. О природе и языке. М., 2005.
18. Sternberg R.J. Cognitive Psychology.-N.-Y.,1999
19. Eysenk M.W. Handbook of cognitive psychology.L., 1984.

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2. Годфруа Ж. Что такое психология? М.,1992.
3. Готтсданкер Р. Основы психологического эксперимента. М.,1982.

Additional:

1. Дружинин В.Н. Экспериментальная психология. СПб.,2000.
2. Куликов Л.В. Психологическое исследование. СПб.,1994.
3. Ганзен В.А. Системные описания в психологии. Л.,1984.
4. Клайн П. Справочное руководство по конструированию тестов. Киев,1994.
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6. Кун Т. Структура научных революций. М.,1983.
7. Поппер К. Логика и рост научного знания. М.,1983.
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9. Фейерабенд П. Избранные труды по методологии науки. М.,1986.
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6. SCALE OF EXAM RESULTS EVALUATION FOR EVERY DISCIPLINE

Letter equivalents of Points	Number equivalents of Points	%	Classical grade system
A	4,0	95-100	Excellent
A-	3,67	90-94	
B+	3,33	85-89	Good
B	3,0	80-84	

B-	2,67	75-79	Satisfied
C+	2,33	70-74	
C	2,0	65-69	
C-	1,67	60-64	
D+	1,33	55-59	
D-	1,0	50-54	
F	0	0-49	Not satisfied
I (Incomplete)	-	-	Incomplete <i>(not available for GPA)</i>
P (Pass)	-	-	«Pass» <i>(not available for GPA)</i>
NP (No Pass)	-	-	«No Pass» <i>(not available for GPA)</i>
W (Withdrawal)	-	-	«Withdrawal» <i>(not available for GPA)</i>
AW (Academic Withdrawal)			Academic Withdrawal <i>(not available for GPA)</i>
AU (Audit)	-	-	«Audit» <i>(not available for GPA)</i>
certified		30-60 50-100	certified
Not certified		0-29 0-49	Not certified
R (Retake)	-	-	Retake

Scale of exam results evaluation for each discipline

Scale and grading system	grade 1-question	grade 2-question	grade 3-question
90-100 excellent	26-30	32-35	32-35
75-89 good	23-27	26-31	26-31
50-74 satisfactory	14-22	18-26	18-26
0-49 unsatisfactory	0-15	0-17	0-17

Criteria for evaluating the results of an exam.

In determining the requirements for examination assessment in the disciplines of an integrated examination, the following criteria are suggested to be the guideline:

- The "excellent" deserves the entrant, who demonstrated a comprehensive, systematic and in-depth knowledge of the program material, the ability to freely perform tasks that are specific to the question posed. As a rule, an "excellent"

grade is awarded to applicants who have mastered the interrelationship of the basic concepts of the specialty in their practical meaning in, who have demonstrated creative abilities in understanding, presenting and using educational material;

- an applicant who demonstrated a complete knowledge of the program material, successfully fulfills the tasks specified in the program, who has mastered the main literature recommended in the program, deserves the grade "good". Typically, the "good" score is awarded to applicants who have shown the systematic nature of knowledge in the discipline and are capable to develop them independently and updating them in the process of further academic work and professional activities;

- an applicant who demonstrated the knowledge of the basic program material in the amount necessary for further study and forthcoming professional work, who is able to perform the tasks stipulated in the program, familiar with the main literature recommended by the program deserves the grade "satisfactory". As a rule, the grade "satisfactory" is exposed to applicants who committed unprincipled inaccuracies in the answer and in the performance of examination assignments;

- an "unsatisfactory" grade is awarded to an applicant who demonstrated gaps in the knowledge of the main program material, made fundamental mistakes in the performance of the tasks provided by the program.