APPROVED
at a meeting of the
Scientific Council
NJSC «Al-Farabi KazNU».
Minutes No.10 dated
May 23, 2022.

The program of the entrance exam for applicants to the PhD for the group of educational programs D070 – «Economics»

1. General provisions.

1. The program was drawn up in accordance with the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 600 “On Approval of the Model Rules for Admission to Education in Educational Organizations Implementing Educational Programs of Higher and Postgraduate Education” (hereinafter referred to as the Model Rules).

2. The entrance exam for doctoral studies consists of writing an essay, passing a test for readiness for doctoral studies (hereinafter referred to as TRDS), an exam in the profile of a group of educational programs and an interview.

Block	Points
1. Essay	10
2. Test for readiness for doctoral studies	30
3. Exam according to the profile of the group of the educational program	40
4. Interview	20
Total admission score	100/75

3. The duration of the entrance exam is 4 hours, during which the applicant writes an essay, passes a test for readiness for doctoral studies, and answers an electronic examination. The interview is conducted on the basis of the university separately.

2. Procedure for the entrance examination.

1. Applicants for doctoral studies in the group of educational programs D070 – «Economics» write a problematic / thematic essay. The volume of the essay is at least 250-300 words.

2. The electronic examination card consists of 3 questions.

Topics for exam preparation according to the profile of the group of the educational program.

Discipline **«Microeconomics (advanced level)»**

Topic 1. Consumer behavior. Hicks and Slutsky substitution effect

Subtopics: Hicks and Slutskys' substitution effect and income effect. Substitution and income cross effects. Slutsky equation for direct and cross effects

Topic 2. Consumer surplus. Compensating and equivalent change in income.

Subtopics: Compensated demand. Definition, economic rationale, sphere of application. Marshal and Hickses' Market demand. Economic rationale of their difference. Compensating and equivalent change in income.

Topic 3. Revealed preference theory. Market demand

Subtopics: Concept of "revealed preferce". Weak axiom of revealed preferences. Economic rationale. Cases of its violation. Price indexes and Quantity index () and their relationship with revealed preferance theory (Paasche, Laspeyres, consumer's aggregate expenditures). Use of revealed preference theory to evaluate living standart and governmnet's social programmes.

Topic 4. Production function anf scientific-technological advance.

Subtopics: Production function axioms. The ratio of changes in the total, average and marginal product of one and two factors of production. Main types of production functions: Cobb-Douglas, Leontief, linear, CES. Equilibrium of the firm as a problem of maximizing profits and as a problem of minimizing costs. Comparative statics of the firm. Firm supply function. Cost function. The trajectory of short-term and long-term growth of the firm. The optimal way to expand production. Types of scientific-technical advance: neutral, capital-intensive, labor-intensive. The relationship between the cost and productivity of a factor.

Topic 5. Market collaboration in conditions of imperfect competition

Sutopics: Perfect competition. Conditions for maximizing profits for the firm and the entire market in the short and long term. The role of economies of scale in determining the number of firms operating in an industry. Monopoly. Taxation of a monopolist: different options. Losses of society from monopoly. Natural monopoly problems. Multi-product and multi-plant monopolist: selection of the optimal number of factories and products in the production of interchangeable and complementary goods. Price discrimination. Monopolistic competition. Equilibrium condition of the firm and the industry in the long run.

Topic 6. Strategic behaviour of firms in the market

Subtopics: Oligopoly: analytical models. Quantity competition and price competition. Cournot competition. Bertrand competition with homogeneous product. Cartel: problems of stability in the long run. Oligopoly: Game Theory. Basic concepts: game strategy, dominant strategy, Nash equilibrium, pure and mixed strategies. Application of game situations for the analysis and solution of applied problems. Pricing strategies. The threat of a new firm entering the market. Price war strategy. Games and external effects. Insurance games.

Тщзшс 7. General economic equilibrium and public welfare

Subtopics: Conditions for the existence, uniqueness and stability of competitive equilibrium. Welfare theorems. Walras's law. General consumer equilibrium for the exchange economy. Conclusion of the contract curve. Equilibrium under monopoly conditions. General equilibrium of producers in an economy with two factors of production and two goods. Efficiency and fairness. Application of welfare theory to taxation of income. Assessment of social equality. Income curve.

Lorentz curve. Gini coefficient. The role of the state in solving the problem of social equality. Social choice of society.

Topic 8. Microecconomics of foreign commercial

Subtopics: International division of labor. Ricardo's model. Constant, decreasing and increasing labor productivity. Heckscher-Ohlin model. The role of specialization with the same technologies. Constructing the curve of trade. Impact of the introduction of an import duty on public welfare in a small country and in a large country. Partial and general analysis of the consequences of the country's entry into the customs union. Pricing in the foreign exchange market.

3. List of references.

Main:

1. Микроэкономика (продвинутый уровень): учебное пособие / В.Ф. Юкиш. – М.: МАДИ, 2018. – 216 с.
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3. Деньгов, В.В. Микроэкономика. В 2 т.: учебник для бакалавриата и магистратуры / В.В. Деньгов. – М.: ЮРАЙТ, 2017. – 410 с
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6. Джейли Д.А. Микроэкономика: продвинутый уровень / Д.А. Джейли, Ф.Дж. Рени. – 2-ое издание. М.: Издательский дом: ГУ ВШЭ, 2016 -720с.
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2. Пиндайк Р., Рубинфельд Д. Микроэкономика. - М.: Дело, 2001.
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5. Michael Baye, Jeff Prince Managerial Economics & Business Strategy (Mcgraw-hill Series Economics) 9th Edition. Publisher: McGraw-Hill Education; 9th edition (December 2, 2016). P. 576.
6. Microeconomics (Quickstudy: Business) Lam Crds Edition. Publisher : QuickStudy; Lam Crds edition (May 31, 2009). 6 pages.
7. Paul Krugman, Robin Wells Microeconomics Fifth Edition. Microeconomics (Quickstudy: Business) Lam Crds Edition. P.688.

Discipline «**Macroeconomics (advanced level)**»

Topic 1. Theory of intertemporal choice

Subtopics: Keynesian consumption theory. The simplest consumption function. Consequences from it. Fisher's theory of intertemporal choice. Intertemporal budget constraint. Intertemporal preferences. Optimal intertemporal choice. Effect of income and interest rate on consumption

Topic 2. Aggregate demand: investment.

Subtopics: Keynesian investment model. Gross investment and net investment. Change in physical capital stock. Net present value of the project. Intrinsic present value of the project. Investment function in the Keynesian model. Neoclassical investment model. The production function and the marginal product of capital. investment decisions of the firm. The optimal level of capital and the appropriate level of investment. Tobin's Q-theory.

Topic 3. Analysis of the aggregate supply in the classical theory.

Subtopics: Determination of the aggregate supply. The marginal product of labor and real wages. Labor market. The function of the firm's demand for labor. Household labor supply. Aggregate supply in classical theory. Flexibility of wages. Derivation of the aggregate supply curve.

Topic 4. Aggregate supply in Keynesian theory

Subtopics: Derivation of the aggregate supply curve with relative rigidity of wages. An extreme Keynesian case. Aggregate supply from a microeconomic perspective. Balancing Keynesian and Neoclassical Models.

Topic 5. Economic cycles. Pulse propagation.

Subtopics: Macroeconomic fluctuations. Known economic cycles. Model of multiplier-accelerator interaction. Types of cyclical fluctuations. Stochastic fluctuations. Real business cycles. Flexible prices. Channels for the propagation of impulses: through a change in physical capital and through a change in the supply of labor. Substitution of labor in time. Labor Productivity and Economic Growth. Economic convergence

Topic 6. Macroeconomic Policy in an Open Economy.

Subtopics: Equilibrium in the market of goods in an open economy. IS and LM curves and their shifts. World interest rate. Small open economy with a fixed exchange rate. Perfect capital mobility. Equilibrium. The impact of fiscal policy, monetary policy. Devaluation of the currency. Fiscal policy and monetary policy in the context of capital flow regulation. The effectiveness of the economic policy of the state in an open economy. Budget deficit and public debt in macroeconomics. Problems of implementation of macroeconomic policy.

Topic 7. Theory of Macroeconomic policy

Subtopics: Target indicators and tools. Tinbergen's model. Monetarism and Keynesianism. The choice of economic policy instruments under conditions of uncertainty. Adaptive expectations. Labor market. Expected and unpredictable inflation and real wages. Rational expectations. R. Lucas's criticism of the theory of economic policy. State budget deficit. Government budget constraint. Ways of financing the budget deficit. Budget deficit and inflation. Seigniorage. Inflation tax.

3. List of references.

Main:

1. Макроэкономика (продвинутый уровень). Бродский Б.Е. Курс лекций. – Магистр, 2019. – 336 с.
2. Высшая макроэкономика. Дэвид Ромер. Учебное пособие. – Изд.дом Высшей школы экономики, 2016. – 855 с.
3. Мэнкью, Н. Макроэкономика / Н. Мэнкью, М. Тейлор. - 2-е изд.. - СанктПетербург [и др.] : Питер, Питер Пресс, 2016. - 559 с.
4. Макроэкономика: практикум: основные понятия, формулы, тесты, задачи, проблемы, литература / Финансовый университет при Правительстве Российской Федерации. - Москва: Норма: Инфра-М, 2016. - 399 с.
5. Розанова Н.М. Макроэкономика. Продвинутый уровень. Учебник для магистров. Т.2. М.: Юрайт, 2016.
6. Мухамедиев Б.М., Дуламбаева Р.Т., Рахматуллаева Д.Ж. Макроэкономика. - Алматы: Қазақ университеті, 2011.
7. Макроэкономика: учебник для бакалавриата и специалитета / С. Ф. Серегина [и др.]; под редакцией С. Ф. Серегиной. — 3-е изд., перераб. и доп. — Москва : Издательство Юрайт, 2018. — 527 с.
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9. Агапова, Т.А. Серегина С.Ф. Макроэкономика. М.: Дело и Сервис, 2004.
10. Тарасевич Л. С, Гальперин В. М., Гребенников П. И., Леусский А. И. Макроэкономика. - СПб: ПИТЕР, 2006.
11. Вымятнина Ю.В., Борисов К.Ю., Пахнин М.А. Макроэкономика: учебник и практикум для бакалавриата и магистратуры. В 2 частях. М.: Юрайт, 2016.
12. Carlin W., Soskice D. Macroeconomics: Institutions, Instability, and the Financial System. Oxford: Oxford UniversityPress, 2014.
13. John Maynard Keynes The General Theory of Employment, Interest, and Money. Stellar Classics, 2016

Additional:

1. Антипина, О. Н. Макроэкономика: учебник / О. Н. Антипина, Н. А. Миклашевская, А. А. Никифоров. - Москва: Дело и сервис, 2017. - 489 с.
2. Долан, Э. Д. Макроэкономика / Общ. науч. ред. Б. С. Лисовика, В. В. Лукашевича, М. Б. Ярцева; Пер. с англ. В. В. Лукашевича, М. Б. Ярцева, Е. Б. Ярцевой. - СПб.: АО "Санкт-Петербург оркестр": АОЗТ "Литера плюс", 2018. - 405 с
3. Абель Э. Макроэкономика: учебник для слушателей, обучающихся по программе "Мастер делового администрирования": [перевод с английского] / Эндрю Абель, Бен Бернанке. - 5-е изд.. - Санкт-Петербург [и др.] : Питер, Мир книг, 2018. - 762 с.
4. Лукас Р.Э. Лекции по экономическому росту. – М.: Изд-во Института Гайдара, 2017.
5. Киреев, А. П. Международная макроэкономика / Алексей Киреев. - Москва: Международные отношения, 2018. - 591 с.
6. Dirk Krueger. Quantitative Macroeconomics: An Introduction. - USA, 2007.
7. Кругман П.Р., Обстфельд М. Международная экономика. Теория и политика: Учебник для вузов. М.: Экономический факультет МГУ, ЮНИТИ, 1997.
8. Киреев А. Прикладная макроэкономика. Учебник. - М.: Международные отношения, 2006.
9. Де Фрей М. История макроэкономики: от Кейнса к Лукасу и до современности. М.: Издательский дом «Дело» РАНХиГС, 2019.

Discipline **«Econometrics (advanced level)»**

Topic 1. Classic regression model.

Subtopics: Multiple Linear Regression. Matrix notation of the model. Estimation of regression coefficients using the least-squares method. Geometric interpretation. Assumptions of the classical model. Checking the significance of the regression coefficients by t-statistics. Evaluating the quality of the regression equation. Linear Coefficient Constraints. Chow test. Analysis of the consequences of incorrect specification of variables. Private correlation.

Topic 2. Multiple aspects of multiple regression.

Subtopics: Consequences of multicollinearity and ways to eliminate it. Dummy variables. Non-linear regression models. Logarithmic, semi-logarithmic, power models. Inverse function. Choosing the shape of the econometric model. Conversion of variables. Stochastic regressors. Method of instrumental variables. Tests for detecting heteroscedasticity. Methods for correcting heteroscedasticity. Standard errors in White's form. Weighted least squares method. Generalized least squares method. Autocorrelation of a random term. Ways to eliminate autocorrelation.

Topic 3. Method of maximum likelihood

Subtopics: Likelihood function. Estimation of coefficients and variance of a random member of a multiple linear regression model using the maximum likelihood principle. Comparison with the method of least squares. Consistency of estimates. Binary choice models. Logit – model and probit – model. Estimation of the parameters of the model.

Topic 4. Simultaneous equations

Subtopics: Structural and reduced form of models. Model specification problem. Indirect least squares method. Instrumental variables. Two-step least-squares method.

Topic 5. Dynamic autoregression model

Subtopics: Distributed lag model. Autoregression model. Causes of lags. Money supply and price level. Median lag and average lag. Lag operator. Operator form of the model. The concept of a spatial lag. Spatial weights. Spatial statistics. I Moran statistics. SAR and SARIMA models. Methods for estimating spatial models.

Topic 6. Stochastic process

Subtopics: Stationary state. Examples of stationary and non-stationary processes. White noise. Random walk. Trends. Seasonality. Taking successive differences. Checking data for stationarity. Autocorrelation function. Private autocorrelation function. Unit root tests. Extended Dickey-Fuller test. Autocorrelation process. Moving average model. Moving average autoregressive process. Integrated process.

Topic 7. Multifactor models of temporal serials

Subtopics: Simultaneous analysis of several variables. Vector autoregressive model. Identification problem. Assessment. Granger Conditioning Analysis. Impulse feedback functions. Engle-Granger test. Cointegration. Cointegrating vector. General trends. Johansen test. Error correction model.

3. List of references.

Main:

1. Тимофеев В. С., Фаддеенков А. В., Щеколдин В. Ю. - ЭКОНОМЕТРИКА 2-е изд., пер. и доп. Учебник для академического бакалавриата - М.:Издательство Юрайт - 2019 – 328 с.

2. Эконометрика - 2: продвинутый курс с приложениями в финансах: Учебник / С.А. Айвазян, Д. Фантаццини; Московская школа экономики МГУ им. М.В. Ломоносова (МШЭ). - М.: Магистр: НИЦ ИНФРА-М, 2017. - 944 с.
3. Елисеева И.И. Эконометрика: учебник для магистров. – М.: Юрайт, серия "Магистр", 2016. – 453 с.
4. Мухамедиев Б.М. Эконометрика и эконометрическое прогнозирование. - Алматы: Қазақ университеті, 2011. - 250 с.
5. Милевский А.С. Эконометрика. Продвинутый уровень.: Учебное пособие. – М.: РУТ (МИИТ), 2017. – 207 с.
6. Кремер Н.Ш. Эконометрика : учебник для вузов /Н.Ш.Кремер, Б.А. Путко; под ред. проф. Н.Ш.Кремера.–М.: ЮНИТИ-ДАНА, 2017.
7. Афанасьев В.Н. Анализ временных рядов и прогнозирование: учебник/ В.Н. Афанасьев, М.И. Юзбашев. - М.: Финансы и статистика, 2019.
8. Тихомиров Н.П., Дорохина Е.Ю. Эконометрика. - М.: Экзамен, 2003.

Additional:
1. Черникова А.Е. Эконометрика (продвинуты уровень) Омск : СибАДИ, 2018. – 41 с.
2. Wooldridge, J. Introductory Econometrics. A modern approach, 5th edition / J. Wooldridge. –Michigan State University: South-Western Cengage Learning, 2017. – 909 p.
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4. Красе М.С. Математика для экономистов/ М.С. Красс, Б.П. Чупрынов. - СПб.: Питер, 2016
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6. Кобелев Н.В. Практика применения экономико-математических методов и моделей: учеб.-практ. пособие/ Н.В. Коболев. -М.: ЗАО «Финстатинформ», 2019.
7. Практикум по эконометрике. Под ред. Елисеевой И.И. - М.: Финансы и статистика, 2001.
8. Козлов А.Ю., Шишов В.Ф. Пакет анализа М8 EXCEL в экономико-статистических расчетах. - М.: ЮНИТИ, 2003.
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10. С.А. Айвазян, Эрнст Р.Берндт Практика эконометрики. Классика и современность. Зарубежный учебник. Юнити, 2018. С. 868.

Discipline **«Research Methodology»**

Topic 1. Review of science and scientific methods.

Subtopics: Methodological and systematic approach to obtaining new knowledge. Scientific knowledge based on objective data. Planned scientific research. Accumulation of empirical data. Scientific method as the basis of all scientific research. A set of research principles and methods. Reliable research results. An empirical approach. Observations. Hypotheses. Experiments. Analysis. Replication.

Topic 2. Objectives of scientific research.

Subtopics: Research Objectives in broad sense. Justified inferences about the relationship between two or more variables. The three main goals of scientific research as description, prediction, and understanding / explanation. Description as the process of identifying, classifying or categorizing phenomena of interest. Qualitative and quantitative research.

Topic 3. Choice of research design

Subtopics: Classification of Research Methods. Desk and field research. Exploratory and conclusive research. Conclusive research: descriptive and experimental (causal) research. Cross-sectional and longitudinal studies. Multiple and single studies. Research problems and questions.

Topic 5. Sampling planning

Subtopics: Formation of a preliminary research plan. Sample planning. Forming a sample on a population. Sample selection process. Types of samples. Sample size. Sample as a subgroup of the general population. A census VS sample. Nonprobability sampling. Probability sampling.

Topic 6. Use of secondary data

Subtopics: Secondary data. Difference of secondary data and primary data. Advantages and disadvantages of secondary data. Various sources of secondary data. Use of secondary data. Secondary data published. Computerized databases. Impact of technologies on research: big data. Ethical issues related to the use of secondary data.

Topic 7. Qualitative research methods

Subtopics: Collecting Qualitative Data. Key issues in qualitative data analysis. Signs of qualitative research methods. Areas of application of qualitative research. Preparing quality data for analysis. The use of computer methods for qualitative analysis of data. The main purpose of the focus groups. Obtaining information of interest by a researcher. Designing a focus group environment. Focus group procedure. In-depth interviews.

Topic 8. Causal research plan: experimentation.

Subtopics: Scientific meaning of causality. Conditions for causality. A causal relationship between two variables. Concomitant Variation. Time order of occurrence of variables. Absence of other possible causal factors.

3. List of references.

Main:

1. Marczyk G., DeMatteo D., Festinger D. Essentials of Research Design and Methodology. Hoboken, New Jersey: John Wiley & Sons, Inc., 2020. – 305p.
2. Flick U. Introducing Research Methodology. 3rd ed. Freie Universtität Berlin, Germany: SAGE Publications, 2020. - 416 p.
3. Tan W. Research Methods. A practical Guide for students and researchers. London: World Scientific, 2018.
4. Salkind N. Exploring research. 9th ed. Kansas: Pearson Education Limited, 2018.
5. Jilcha Sileyew K. Research Design and Methodology // Cyberspace. 2020.
6. Малхотра Н. Маркетинговые исследования. Москва: Издательство: Вильямс, 2016. – 1184 с.
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Additional:

1. Russell, B. Qualitative consumer & marketing research/ Belk Russell, Fischer Eileen, V.Kozinets Robert.- London: SAGE, 2013.- 234 p.
2. McDaniel, C. Marketing research/ C. McDaniel, R. Gates. - 10 th edition.- USA: Wiley, 2014.- 783 p.

3. Chirchill, G.A. Marketing Research: Methodological Foundations / G.A. Chirchill.- 7th edition.- Orlando: The Dryden Press, 1999.- 401 p.
4. Gupta, S.L. Marketing Research / S.L Gupta. - New Delhi: Excel Books, 2004. - 600 p.