

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
V. N. KARAZIN KHARKIV NATIONAL UNIVERSITY

Deputy Head of the Admissions Committee,
Acting Rector of V. N. Karazin Kharkiv National
University

Oleksandr HOLOVKO

PROGRAMME
of the professional exam
in applied economics
in the speciality C1 ‘Economics and international economic relations (by
specialisation)’
study programme ‘Applied Economics’
(for Master's degree)



ДОКУМЕНТ СЕД АСКОД
Сертифікат 3B24020800
Підписувач ГОЛОВКО ОЛЕКСАНДР МИКОЛАЙОВИЧ
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Харківський національний університет імені В. Н. Каразіна



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1. GENERAL PROVISIONS

The educational program "Applied Economics" is an open Master's program in economics. Applications are accepted from bachelors and specialists of various specialties.

Master's program in "Applied Economics" prepares for socio-economic, organizational and managerial, analytical, research and teaching activities. Training in this specialty ensures the creation of a specialist, who is able to use economic and mathematical methods of analysis, forecasting and modelling to solve applied problems and develop and implement management solutions in the economy and its branches – industrial and agrarian business, labour markets, financial markets, environmental protection.

The program includes a cycle of humanitarian training (methodology of socio-economic processes research, modern economic theories, global problems of today, world economy and globalization, economic law); a cycle of fundamental modules (modelling of economic dynamics, simulation modelling, applied econometrics, discrete modelling, intelligent data analysis systems), and a cycle of applied modules (theory of industry markets, project management, economic modelling, e-commerce, actuarial calculations).

The entrance test for the EP in the specialty "Applied Economics" assumes that applicants have basic knowledge of economics and mathematics, sufficient for further studies in this specialty.

The purpose of the test is to assess the qualification received by the students, that is, the level of their mastery of general theoretical and special knowledge in the field of economics, the use of mathematical methods and modern information technologies, as well as their general cultural outlook, which is necessary for a modern specialist.

The entrance exam is held within the established time limits according to the decree of the university. Only students with bachelor's or specialist (master's) diplomas in various specialties are allowed to take the entrance exam. Before the exam, the graduating department provides review lectures and consultations on the key issues of the exam. The entrance examination is conducted by the entrance examination committee, the composition of which is approved by a separate decree. The commission includes the chairman, who is a leading scientist in the specialty, as well as senior lecturers of special courses included in the trial program.

Students who have successfully passed the entrance exam are recommended for admission to master's studies in the "Applied Economics" educational program

2. EXAM CONTENTS

Key questions from the disciplines of general economic and mathematical training are included in the entrance test program. The economic part of the test takes the form of a test task, which mainly covers key issues of micro- and macroeconomics.

Microeconomics

Economic agents. Market. Consumers. Producers. Equilibrium price. Demand.

Demand curve. Supply. Supply curve. Market equilibrium. Price elasticity of demand. Price elasticity of supply. Consumer behavior. Supply and theory of the firm. Direct costs. Indirect costs. Economic profit. Net profit. Marginal product. The law of diminishing returns. Market structure theory. Types of markets. Market barriers. Perfect competition. Monopoly. Oligopoly. Monopolistic competition. Monopsony. Price discrimination. Non-price competition. Market of production factors. Labor market. Capital market. Natural resources market. Economic rent. Public sector. Public goods.

References

1. Mankiw N.G. Principles of microeconomics. Harvard University. 8th Edition. 2016.
<https://zalamsyah.staff.unja.ac.id/wp-content/uploads/sites/286/2020/10/Principles-of-Microeconomics-8th-Ed.-GREGORY-MANKIW-1.pdf>
2. Curtis Douglas and Ian Irvine. Principles of microeconomics.
[https://socialsci.libretexts.org/Bookshelves/Economics/Principles_of_Microeconomics_\(Curtis_and_Irvine\)](https://socialsci.libretexts.org/Bookshelves/Economics/Principles_of_Microeconomics_(Curtis_and_Irvine))

Macroeconomics

The main problems of macroeconomics: inflation, unemployment, economic growth, income distribution, trade balance, and government influence on them under modern conditions. Macroeconomic indicators in the system of national accounts. Methods of calculating the main macroeconomic indicators. Nominal and real GNP.

Problems of inflation in the modern economy.

Inflation and its causes. Hidden and open inflation. Money emission as a cause of demand inflation. Inflation expectations. Deflation. Demand and supply in macroeconomics. Components of aggregate demand: expenses consumers, investments, government spending and net export. Non-price factors of aggregate demand. Aggregate supply in the economy. Macroeconomic equilibrium in the recession. Full employment equilibrium.

Consumption and saving: relationship and differences. Investments and their functions. Investment demand function.

The main economic functions of the government. Methods and tools of government regulation. Indicative and direct planning in a market economy. Government economic policy. Fiscal policy. National budget. Taxes and their types. Discretionary and non-discretionary fiscal policy. Automatic stabilizers of the economy.

Labor market and social policy. Types and causes of unemployment. Okun's law. Socio-economic consequences of unemployment. The role of government in labor market and wage regulation.

Money market and monetary policy. Money supply, its structure and measurement. Monetary aggregates. Money demand. Equilibrium on the money market.

References

1. McConnell, Campbell R., Stanley L. Brue. Economics. 22th Edition. MH Education. 2021.
2. Blanchard, Olivier (2021). *Macroeconomics* (Eighth, global ed.). Harlow, England: Pearson.
3. Mankiw, Nicholas Gregory (2022). *Macroeconomics* (Eleventh, international ed.). New York, NY: Worth Publishers, Macmillan Learning.

Mathematics

Applicants' mathematical knowledge is examined using tests and two calculation problems, the solution of which requires knowledge of the following:

- Vector-matrix operations: vector operations (linear combinations vectors, linear dependence and independence of vectors, scalar product); matrix operations. Inverse matrix; solution of systems of linear equations.
- Differential calculus: derivative, partial derivatives, derivatives and differentials of higher orders, extremum of functions of one and several variables.
- Methods to find the extremum of functions: the function of one and several variables.

References

1. Akihito Asano. An Introduction to Mathematics for Economics. Cambridge university press, 2013.
[https://nibmehub.com/opac-service/pdf/read/An%20Introduction %20to%20 Mathematics%20for%20Economics.pdf](https://nibmehub.com/opac-service/pdf/read/An%20Introduction%20to%20Mathematics%20for%20Economics.pdf)
2. Rosser M. Basic Mathematics for Economists. Second Edition. 2003.
<https://www.railassociation.ir/Download/Article/Books/Basic%20Mathematics %20for%20Economists.pdf>

CRITERIA FOR ASSESSING APPLICANTS' KNOWLEDGE

Each variant of the professional exam consists of two parts:

- 1) a theoretical task, which includes 14 tests;
- 2) 2 calculation and analytical tasks.

Each test of the theoretical task is a closed form with multiple choice (several correct answers).

Each test of the theoretical task is evaluated as follows:

- 1) full correct answer
(all correct answers are marked and
no incorrect answers are indicated) - 10 points
- 2) incomplete correct answer
(more correct answers are marked than incorrect answers,
than incorrect answers) - 7 points

- 3) the number of correct answers indicated
is equal to the number of incorrect answers - 5 points
- 4) incomplete wrong answer
(there are more incorrect answers than correct ones,
than correct answers) - 2 points
- 5) completely wrong answer
(all answers were given incorrectly or
no answers to the test were marked) - 0 points

Each calculation and analytical task contains one correct answer, which is worth 30 points (in case of an incorrect answer - 0 points).

The maximum possible total number of points gained by an applicant for completing theoretical and calculation and analytical tasks is 200 points.

An applicant is allowed to participate in the competitive selection for enrolment if the score of the professional exam is at least 100 points.

Chair of the Subject Examination Committee

Marina KUDINOVA

Approved at the meeting of the Admissions
Committee
of V.N. Karazin Kharkiv National University
Protocol №2 dated March 20, 2025

Responsible Secretary of the Admissions Committee
Hanna ZUBENKO