Ministry of Education and Science of Ukraine

National technical university
“Kharkiv polytechnic institute”

APPROVED
The Head of the Academic Council
_____ L.L. Tovazhnyanskyy

EDUCATIONAL AND RESEARCH PROGRAM

Field of knowledge	07 Management and Administration
Specialty	073 Management
Education level	Doctor of Philosophy (PhD)

Kharkiv
2019

F O R E W O R D

1. Approved and put into effect by the Resolution of the Academic Council of the university, protocol № 2 of 25.01.2019.

2. Agreed:

   Head of the Postgraduate

   Training Department assoc. prof. V.V. Shtefan

3. Introduced for the first time

4. The Program was developed by:

   The Head of the project group (the program guarantor) – Krasnokutska Nataliia Stanislavivna, doctor of economic sciences, professor, the Head of the department of management and taxation.

   The members of the project group:

   1. Brin Pavlo Volodymyrovych – candidate of economic sciences, associate professor, associate professor of the department of management and taxation.
   2. Danko Taras Volodymyrovych - candidate of economic sciences, associate professor, professor of the department of international business and finance.
   3. Dyuzhev Viktor Gennadiyovych - doctor of economic sciences, professor, professor of the department of innovative entrepreneurship management and international economic relations.
   4. Pantelyeyev Mykhaylo Sergiyovych – candidate of technical sciences, associate professor, associate professor of the department of innovative entrepreneurship management and international economic relations.
   5. Prokhorenko Olena Viktorivna - candidate of economic sciences, associate professor, associate professor of the department of management and taxation.
   6. Chaikova Olena Igorivna - candidate of economic sciences, associate professor, associate professor of the department of international business and finance.

5. Valid temporarily until the higher education standards are adopted

I. Title of the Program

Qualification Doctor of Philosophy in the field of Management

Type of diploma	unitary
Higher education institution	National technical university "Kharkiv polytechnic institute"
Accrediting institution	
Accreditation period	
Level of the Program	corresponds to the eighth qualification level of the National Qualifications Framework (Ukraine)

I. General provisions

1. The purpose of the educational and research program

Determination of the content of education for preparation the doctor of philosophy in "Management".

2. Characteristic of the program

2.1. The program covers the content of training at the National technical university "Kharkiv Polytechnical Institute", the volume and level of assimilation in the course of training of doctors of philosophy in the specialty 073 "Management", educational components, a form of reports and certification, training term.

2.2. The program is carried out in a full-time and a correspondence form of postgraduate study, as well as out of postgraduate study. The statutory term is four years in a postgraduate study and five years in out of postgraduate study.

2.3. The postgraduate training program consists of educational and scientific components. The volume of the educational component has 40 ECTS credits, regardless of the form of education and is implemented in the first three years of study. Quantity of the credits, realized in one academic year, not less than 5 no more than 30 credits. The first two years are divided into two semesters, each semester consists of ten academic weeks, others are assigned to research work. The semester comes to an end one week of a session.

The educational component of the educational and research program (ERP) compulsory socio-humanitarian disciplines and the block of disciplines of the free choice of the graduate student which includes disciplines of scientifically vocational and practical training, as well as discipline in the specialty.

Theoretical training together with scientific and practical training ensures that the postgraduate student obtains the deep knowledge necessary for the implementation of the dissertation work with the corresponding educational-

qualification level of education.

2.4. The program provides teaching of certain general educational and professional academic courses in English

2.5. It’s possible to use the distance technologies for teaching general education courses.

2.6. PhD training according to educational program is carried out under the guidance of a scientific supervisor. The noncompliance of the educational and scientific constituents is the reason for the post-graduate student's deduction as failure of an individual educational plan. The scientific component is performed for the entire period of study, it is not interrupted by the educational component, the examination session and the practice.

2.7. The program includes pedagogical practice in the third year of study and takes ten weeks. The practice ends with a report.

2.8. During a period of study a postgraduate student reports on his implementation of the individual plan at a meeting of the graduate department and the Institute Academic Council twice a year. Postgraduate student is annually certified by a research supervisor according to the schedule of the educational process.

2.9. The PhD degree in the specialty "Management" is awarded on the basis of the implementation of educational and scientific components of the program. The ending of the scientific component is the certification in the form of a successful public defense of the dissertation in the specialized academic council.

In the case of the pre-term full implementation of the eductional program, passing a certification the postgraduate student is awarded PhD (higher education degree).

2.10. Postgraduate student is issued a PhD diploma in the case of the certification and performance of the educational program.

3. Justification of the research field for the training of postgraduate students within the framework of the educational and research program

At National technical university “KhPI”, the training of postgraduate students pursuing the Doctor of Philosophy degree in specialty 073 “Management” is carried out within the range of economic specialties specified in the list of 2011 –08.00.04 (Resolution №1151 of 06.11.15). Dissertation research projects were conducted within the framework of scientific schools of the departments, whose fruitful scientific activities have been taking place within state-registered research projects, international grants or contracts with commercial organizations: the department of management and taxation, the department of international business and finance, the department of innovative entrepreneurship management and international economic relations, the department of economic analysis and accounting.

№	Department offering a degree program	The name of scientific school	The head of scientific school	Titles of state-registered research projects of the Ministry of Education and Science of Ukraine (international grants)
1	The Department of Management and Taxation		Krasnokutska N.S.	1. Value-based management aimed at realizing the resource potential of a trading company (state registration number 0113U000157)
				The Department's SRW: Managing the development of industrial enterprises (state registration number 0116U005544)
			Sokolenko V.A.	Study of mechanisms for increasing the efficiency of economic activities of machine building companies (state registration number 0113U008407).
2	The Department of Innovative Entrepreneurship Management and International Economic Relations	Management of innovation processes in industrial companies	Pererva P.G.	Study of the processes of the Ukrainian economy restructuring and their impact on strengthening of innovation potential (2002-2004, state registration number 0102U000971)
				The formation of an organizational and economic mechanism for monitoring innovation activities (2011-2013, state registration number 0111U002284)
3	The Department of Economic Analysis and Accounting		Manoylenko O.V.	The Department's SRW: Development of economic and organizational principles and application of effective methods and standards of accounting and economic analysis at regional enterprises
				The Department's SRW: Study of the effect of market factors on the

				efficiency of production in machine building
4	The Department of International Business and Finance		Mishchenko V.Ya.	The Department's SRW: Strategic controlling in the system of enterprise value management
			Vlasova N.A.	The Department's SRW: Proactive management of financial results in machine building companies
			Danko T.V.	The Department's SRW: Management of international business activities of high-technology enterprises in the world markets of knowledge-intensive products.

4. The purpose and objectives of the educational and research program

The purpose of the Doctor of Philosophy program in specialty "Management" is training postgraduate students, which assumes acquiring by postgraduate students theoretical knowledge, abilities, skills and other competencies sufficient for generating new ideas, solving complex research problems in the field of management and administration and/or research and innovation activities, mastering scientific research and pedagogical methodology, carrying out an individual research project and obtaining scientifically novel results that have theoretical and practical value.

5. Academic and professional rights

5.1. Further educational possibilities

Post-graduate students who completed their education within this ERP and were awarded a Doctor of Philosophy diploma, can continue their education in Ukrainian higher education institutions or abroad and pursue the Doctor of Science degree.

5.2. Employment

The Program graduates can be employed in positions involving scientific research activities in the field of management and administration and teaching

activities within educational programs of higher education institutions in Ukraine and other countries.

6. Requirements to the education-qualification level of applicants

6.1. To be admitted to the Doctor of Philosophy degree program, applicants must have a Master's degree or educational qualification level of specialist.

6.2. Applicants are enrolled in the postgraduate study program in accordance with the admission rules which are approved by the Academic Council of NTU "KhPI".

II. The content of educational and research program

7. Program competencies of the ERP in the specialty "Management"

7.1. During the studies within the ERP a postgraduate student should develop general and professional competencies.

7.2. General competencies (GC), which do not depend on the field of knowledge and are mandatory for applicants for the Doctor of Philosophy degree:

Code	Content
	General training
GC-1	Capacity for critical thinking, generation of new complex ideas, analysis and synthesis of integral knowledge
GC -2	Mastering of general scientific competencies aimed at developing a systematic scientific worldview
GC -3	Ability and readiness to master basic information technologies, ways and means of receiving, storing, and processing information (experimental data bases), methodology of research and pedagogical activities, presentation of research results and communications with the international community
GC-4	Ability and readiness to take charge of a domestic or international research program or project, to be an active participant in international scientific research activity
GC-5	Skills in carrying out patent information research, intellectual property protection; ability to assess commercial potential and prospects for commercialization of technological innovations
GC-6	Capacity for research and pedagogical activity in the field of management and administration галузі
GC-7	Ability to act on the basis of ethical reasoning and academic integrity

GC-8	Ability to organize and carry out original scientific research
GC-9	Ability to communicate with the scientific community for the purpose of presenting and publishing research results in the official state language, English and/or other foreign language

7.3. Professional competencies, which reflect abilities and skills related to specialty 073 «Management».

Code	Content
	Professional training
PC-1	Universal skills of a researcher in the field of management, in particular in the use of modern information technology in research activities, in management of research projects and /or development of proposals regarding research funding, intellectual property rights registration
PC-2	Ability to search for, process, analyze and generalize information in the process of conducting independent scientific research in the field of management
PC-3	Ability to justify the choice and to use methods and instruments of scientific research in the field of management
PC-4	Ability to assess the outcomes and take responsibility for the results of managerial decisions
PC-5	In-depth knowledge of management, in particular understanding of theoretical and practical problems, the history of development and the current state of scientific knowledge, critical analysis of major concepts, mastering of scientific terminology
PC-6	Ability to effectively manage the processes of research, implementation, improvement and development of novel methods for managing human resources
PC-7	Ability to use technologies of intellectual capital creation, to analyze and evaluate the intellectual capital structure and to identify peculiarities of its formation
PC-8	Capacity for planning on the basis of the use of modern scientific technologies and controlling the activities of industrial companies; ability to develop scientifically grounded strategic, tactical and operational plans for companies and their departments
PC-9	Capacity for comprehensive and systematic planning of foreign business activities of a company facing international competition
PC-10	Ability to organize and conduct research in the field of international business management whose results have theoretical and practical value
PC-11	Ability to make strategic decisions as to the development of international business activities of a company
PC-12	Ability to make effective and efficient managerial decisions in all process areas of foreign business activities of a company
PC-13	Capacity for critical analysis, evaluation and synthesis of new ideas in the sphere of international management under highly dynamic and uncertain conditions
PC-14	Ability to implement the results of own research in the field of management
PC-15	Language competencies sufficient for presenting and discussing the results of own research in a foreign language (English or other, depending on the specialty requirements) both in oral and written form, as well as full understanding of the foreign language scientific texts related to management

8. Learning outcomes of the ERP in specialty "Management"

The results of mastering the ERP include the acquisition and understanding of theoretical knowledge, scientific research skills, modern research methods.

Code	Content
	General training
LO-1	To know and understand the basic outlook and socio-cultural knowledge contributing to the development of the general culture and socialization of the personality, tendency to ethical values, the understanding of the causal relationships of the development of society and the ability to use them in professional and social activities.
LO-2	To know and understand modern methods of philosophical research for solving social and scientific problems; to know and understand the complex scientific and technical problems in the context of culture
LO-3	To demonstrate the skills of presentation and publication of scientific and research results in state and foreign languages in an oral and written form.
LO-4	To demonstrate skills of scientific communication, international cooperation, present to the wide scientific community and the public in the field of management in state and foreign languages in an oral and written form.
LO-5	To know and understand the features and possibilities of modern information technologies and their application in scientific research
LO-6	To know, understand and be able to use special mathematical methods and software for computer mathematics
LO-7	To know and understand modern methods of mathematical and computer modeling of complex systems, the system analysis and design, optimization and decision making, forecasting and expert evaluation.
LO-8	To know and understand modern methods of researching mathematical models and algorithms of data mining, machine learning, analysis of signals, images and texts, information retrieval and knowledge mining, information security
LO-9	To use the program and target method for management of scientific and technological development of the enterprise; to form a project portfolio and to operate it
LO-10	To create the scientific program and to operate the maintenance of its components. To define organizational structure, roles and responsibility in the program. To provide quality and to share resources in the program
LO-11	To manage the integration, content, time, cost, quality, risks, human resources, communications, purchases and stakeholders of a research project
LO-12	To apply scientific and pedagogical technologies, to formulate contents, the training purposes, ways of their achievement, the forms of control, to bear responsibility for efficiency of educational process
LO-13	To carry out testing and implementation of the results of own research in the field of management
LO-14	Mastering specialized factual and theoretical knowledge about intellectual property, its legal institutes, the basic concepts and definitions concerning technological innovations; technology transfer and innovation entrepreneurship. Ability to assess the commercial potential and prospects of commercialization of technologies, the development of agreements on the disposal

	of property rights, the identification of opportunities for commercialization of knowledge, high scientific level and the professionalism of scientific staff
LO-15	Ability of evaluating property rights of intellectual property according to a goal
LO-16	Providing a high innovative level of scientific research, facilitating the acquisition and commercialization of intellectual property rights contained in the results of research, developmental, technological and teaching-methodical works
LO-17	To know the methods of modeling, to be able to build mathematical models, to own computer simulation methods, methods of optimization, to own methods of decision-making
LO-18	To know the methods of probability theory and indistinct mathematics, to possess methods of modeling in conditions of uncertainty. To know the methods of computing intelligence, possess methods of artificial neural networks and machine learning
LO-19	To act on the basis of ethical considerations and academic integrity in the process of conducting scientific research, publicizing the results and their implementation
	Professional training
LOp-1	To form a systemic scientific outlook, to master modern management theories and concepts
LOp-2	To carry out a critical analysis, to summarize research results, to formulate and substantiate the conclusions and suggestions on the development of conceptual and methodological knowledge in the field of management.
LOp-3	To initiate, develop and implement management projects, to administrate them and search partners for their implementation.
LOp-4	To select and use general scientific and special research in management.
LOp-5	To develop theoretical foundations for solving the problem of starting new types of economic activities (business) within the existing organizations or creating new ones.
LOp-6	To organize and carry out original investigations in the field of management at the appropriate professional level, to achieve scientific results that create new knowledge for solving current problems of theory and practice.
LOp-7	To demonstrate the skills of independent performance of scientific research, flexible thinking, openness to new knowledge, to evaluate the results of autonomous work and be responsible for personal professional development and training of others
LOp-8	To predict and plan research and management decisions according to staff efficiency increase
LOp-9	To apply the methods of intellectual capital assessment, to determine the need of intellectual capital and develop tools for the formation of intellectual capital of the organization
LOp-10	To analyze and use appropriate planning, budgeting and cost management techniques
LOp-11	To apply theoretical approaches and models of international business and foreign economic activity management
LOp-12	To substantiate and apply research methods of the international business environment; to be able to summarize and present the results of scientific research
LOp-13	To analyze foreign economic activity of the enterprise; to be able to develop a strategy of an international company; to identify the key directions of the strategic development of an international company

LOp-14	To solve administrative problems connecting with the providing of the effective functioning of international teams, processes, supply chains, as well as implementation of international projects.
LOp-15	To explain the content and methodological foundations of international financial management; to be able to solve problems of financing of international enterprises economic activity
LOp-16	Be able to solve the tasks of providing enterprise sales activity in international markets
LOp-17	To identify management features at international high-tech enterprises; to solve the tasks of management of international high-tech enterprises and to improve their activity in conditions of unpredictable and volatile external environment

9. The normative content of training within the EP, competencies and learning outcomes

Code	Components of the educational program	Number of credits	Competence	Learning outcome
1. General training. Obligatory (required) components				
$З_1$	World Image and Social-Cultural Basis of the Scientific and Technical Activity	4	GC-1 GC-7 GC-8	LO-1 LO-2 LO-13
$З_2$	Foreign Languages for Communication in a Scholarly and Pedagogical Environment	8	GC-3 GC-4	LO-3 LO-4
Optional components				
B_1	Modern Information Technologies: Models and Methods in Management Information Technologies and Decision Making; Modeling and Analysis of Problem-Oriented Software Systems; Information Technology of Data Analysis and Knowledge Extraction; Information Retrieval and Semantic Web; Modern Technologies of Web Applications Development (Java, .Net, PHP, JS)	3	GC-2 GC-3	LO-5 LO-6 LO-7 LO-8
B_2	Management of Scientific Projects and Programs: Management of Scientific Projects and Research; Project Portfolio Management and Program Management of Scientific Research; Management of Enterprise Scientific and Technological Development	3	GC-2 GC-3 GC-4	LO-9 LO-10 LO-11
B_3	Pedagogy of Higher School: Basics of Higher School Pedagogy; Educational Rhetoric; Professional Culture of Educators;	2	GC-3 GC-6	LO-1 LO-12 LO-13

	Methodology and Logic of Scientific and Educational Activity in Higher Technical School			
B_4	Intellectual Property in Technological Innovation: Legal Regulation of Copyright; Innovation, Technology and Patent Law; Scientific and Technical Informational Resources and Patent and Informational Researches; Intellectual Property Management	2	GC-5	LO-14 LO-15 LO-16
B_5	Special Topics of Mathematics for Researchers: Mathematical Models and Computer Simulation of Complex Systems; Mathematical methods for optimization and decision making; Probabilistic and Fuzzy Models and Methods in Engineering and Economics; Mathematical Methods of Computational Intelligence and Machine Learning	3	GC-1	LO-17 LO-18
B_6	Preparation and writing of a thesis	1	GC-3	LO-19
2. Professional training. Optional components				
B_7	Organization theory (advanced course)	4	PC-1	LOp-1 LOp-5
B_8	Modern research methods in management	4	PC-2 PC-4	LOp-2 LOp-3 LOp-6
B_9	Technology management	4	PC-1 PC-3	LOp-3 LOp-5
B_{10}	Modern methods and systems of management	4	PC-2	LOp-4
B_{12}	Business performance management	4	PC-4	LOp-6 LOp-7
B_{13}	Special topic seminar in management	4	PC-5	LOp-1 LOp-7
B_{14}	Modern methods and innovative technologies in personnel management	4	PC-6	LOp-8
B_{15}	Contemporary issues in operations management	4	PC-3	LOp-3
B_{16}	Main trends and concepts in intellectual capital management	4	PC-7	LOp-9
B_{17}	Novel approaches to planning and control in an industrial company	4	PC-8	LOp-10
B_{18}	Internet economy and specificity of Internet management	4	PC-2	LOp-1
B_{19}	Special topics in innovation management	4	PC-3	LOp-5
B_{22}	Financial and managerial accounting and reporting as information base for financial management	4	PC-2	LOp-2
B_{23}	Models and methods of decision making in analysis	4	PC-2 PC-4	LOp-4 LOp-6

B_{24}	Social responsibility in the context of sustainable development of a company	4	PC-4 PC-6	LOp-7 LOp-8
B_{25}	Diagnostics and forecasting of financial and economic position of a company	4	PC-2 PC-4	LOP-2 LOp-4 LOp-6
B_{26}	Investment project analysis	4	PC-1 PC-3	LOp-1 LOp-3 LOp-5
B_{27}	Statistical methods in scientific research	4	PC-2 PC-4	LOp-4 LOp-6
B_{30}	International business theory	4	PC-9	LOp-11
B_{31}	Methods for international business environment analysis	4	PC-10	LOp-12
B_{32}	Strategic management of international companies	4	PC-11	LOp-13
B_{33}	International management of projects, processes and supply chains	4	PC-12	LOp-14
B_{35}	International financial management	4	PC-12	LOp-15
B_{36}	International marketing	4	PC-12	LOp-16
B_{37}	Management of knowledge and innovation in foreign economic activity	4	PC-13	LOp-7
B_{38}	Management of international high-technology companies	4	PC-13	LOp-17
	Pedagogical practice	2	GC-6	LO-1 LO-12 LO-13
	Preparation for a thesis defense			LO-4; LO-19
	Graduation certification			LO-13; LOp-2
	Thesis defense			LO-3; LO-13; LOp-2

10. Structural-logical scheme of the educational and research acitivities

Term	Components of the educational program
1	Research work
2	*Postgraduate choice*: Modern Information Technologies; Management of Scientific Projects and Programs; Pedagogy of Higher School; Preparation and writing of the thesis Research work
3	*Postgraduate choice:* Organization theory (advanced course). Modern research methods in management. Special topic seminar in management. Modern methods and innovative technologies in personnel management. Contemporary issues in operations management. Main trends and concepts in intellectual capital management. Financial and managerial accounting and reporting as information base for financial management. Models and methods of decision making in analysis. Diagnostics and forecasting of financial and economic position of a company. International business theory. Methods for international business environment analysis. Strategic management of international companies. International management of projects, processes and supply chains. Research work
4	*Postgraduate choice:*

	Modern methods and systems of management. Technology management. Business performance management. Novel approaches to planning and control in an industrial company. Internet economy and specificity of Internet management. Special topics in innovation management. Investment project analysis. Statistical methods in scientific research. Social responsibility in the context of sustainable development of a company International financial management. International marketing. Management of knowledge and innovation in foreign economic activity. Management of international high-technology companies. Research work
5	Pedagogical practice Research work
6	Research work
7	Research work
8	Writing of a thesis Thesis defense

11. Pedagogical practice

Practice is an inseparable part of the ERP and a mandatory element of the training of a Doctor of Philosophy in specialty "Management". The purpose of pedagogical practice is to develop and solidify pedagogical skills of a post-graduate student as a future teacher at a higher education institution. Pedagogical practice takes place in accordance with the working program approved by the degree offering department which reflects basic pedagogical technologies used in teaching profession-related disciplines. In the practice program, it is necessary to specify the academic disciplines, type and topics of classes, outline of each class, information about the responsible lecturer.

12. Doctoral examination in specialty

Doctoral examination is based on theoretical knowledge acquired by a graduate student during the first two years of studies and the review of the post-graduate student's research works. The examination is held at the end of the second (third) year, lasts for two days and consists of two parts.

The content of the doctoral examination is described and approved in a corresponding program. The first part represents a written exam lasting ~ 4 hours and aimed at testing the postgraduate student's theoretical knowledge in the specialty and related fields. The second part of the examination is intended for testing the postgraduate student's abilities (to formulate research questions, to develop a research plan, to interpret results) and competency in the postgraduate student's research area, and comprises the following components: a written document summarizing the research results, maximum 10-page long (Abstract, Introduction, Methodology, Results, Discussion); the review of publications in the postgraduate student's research area; 30-minute oral debriefing session (interview) with the examination committee (lasting until the applicant answers "I do not know"). After passing the doctoral examination, an applicant completes the PhD thesis.

13. Scientific research work

Scientific research work carried out by a post-graduate student in accordance with the topic of the PhD thesis represents a key component of the training within the ERP. During this period, a post-graduate student develops the ability to carry out independent scientific inquiry, to select and justify research methods and to analyze the results of own research work. The scientific research is conducted under the supervision of a scientific advisor who takes all the responsibility for the training of the postgraduate student, timely completion and submission of the PhD thesis.

14. PhD thesis

The preparation and defense of a PhD thesis constitute the final stage in the training at the third educational and research level. The work on a PhD thesis involves the following stages:

1. Selection and justification of the research topic. Literature review.
2. Development of the research plan.
3. Selection and justification of research methods.
4. Receiving of results, their systematization and analysis.
5. Presentation and approbation of the research results through participation in scientific conferences, publications in international and domestic scientific editions.
6. An active participation in research activities carried out at the degree offering department within the framework of state-registered scientific research works, international projects, grants, contracts with commercial companies.
7. International academic traineeship in (participation in international collaboration with) higher education institutions that offer doctoral programs in specialty “Management”.
8. The presentation of a draft of the PhD thesis at the meeting of the degree offering department.
9. The preparation and submission of the PhD thesis to a specialized scientific board followed by the defense procedure.

III. Availability of academic staff for teaching profession-related disciplines

Profession-related and scientific research training of post-graduate students in specialty “Management” is conducted by faculty members of the departments offering degree programs.

№	Department offering a degree program	Number of research and pedagogical staff members		Number of academic supervisors
		Doctors of sciences, prof. (assoc. prof.)	Candidates of sciences, assoc. prof.	
1.	Management and Taxation	1	9	7
2.	Innovative Entrepreneurship Management and International Economic Relations	3	26	9
3.	Economic Analysis and Accounting	4	10	10
4.	International Business and Finance	2	15	7

Head of the degree offering Department of Management and Taxation
(назва кафедри)

_____ Krasnokutska N.S.
(підпис) (прізвище)

Head of the degree offering Department of Innovative Entrepreneurship Management and International Economic Relations
(назва кафедри)

_____ Pererva P.G.
(підпис) (прізвище)

Head of the degree offering Department of Economic Analysis and Accounting
(назва кафедри)

_____ Yakimenko-Tereshchenko N.V.
(підпис) (прізвище)

Head of the degree offering Department of International Business and Finance
(назва кафедри)

_____ Міщенко В.А.
(підпис) (прізвище)

Guarantor of the Educational and Research Program _____ Krasnokutska N.S.
(підпис) (прізвище)