



Syllabus

Program of educational discipline



Fundamentals of Academic Research

Specialty

072 – Finance, banking, insurance and the stock market

Institute

Educational and Scientific Institute of Economics, Management and International Business

Educational program

Finance and Banking

Department

Accounting and finance (205)

Level of education

Master's level

Course type

Mandatory

Semester

1

Language of instruction

English, Ukrainian

Lecturers and course developers



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Doctor of Economic Sciences, Professor, Professor of the Department of Accounting and Finance of NTU "KhPI"

Author of more than 180 scientific and educational and methodological works. Leading lecturer in the disciplines: "Analysis of economic activity", "Economic analysis", "Fundamentals of scientific research", "Investment analysis"

Learn more about the teacher on the department's website

<https://web.kpi.kharkov.ua/acctfin/pro-kafedru/professors-ko-vikladats-kij-sklad/>

General information

Summar

The course "Fundamentals of scientific research" is aimed at developing knowledge and skills necessary for conducting scientific research. During the training, applicants will learn how to organize and conduct scientific research; master the skills of scientific communication. Studying the course is based on an understanding of academic integrity and academic ethics. The course also helps applicants understand the procedure for preparing and defending a master's thesis.

Course objectives and goals

The formation of theoretical knowledge about the methodology, methods and organization of scientific research and practical skills of carrying out scientific research. Mastering the skills of scientific communication in order to solve the tasks

Format of classes

Lectures, practical classes, consultations. Control work. Final control - Differentiated grading.

Competencies

GC01. Ability to think abstractly, analyze, and synthesize

GC 03 Ability to conduct sound research

GC 06 Interpersonal interaction skills.

PC02 Ability to use theoretical and methodological tools to assess and model financial activities

PC04 Ability to evaluate the effectiveness of academic, analytical, and methodological tools to justify finance, banking, and insurance management decisions

PC07 The ability to search, use, and interpret information is necessary for solving professional and academic problems in finance, banking, and insurance

PC09 Ability to develop technical specifications for the design of information systems in finance, banking, and insurance

Learning outcomes

LO03 To adapt and modify existing academic approaches and methods to specific situations that occur during work

LO04 To search, process, systematize, and analyze information necessary for solving professional and academic problems in finance, banking, and insurance

LO06 To present research results in an accessible and reasoned manner orally and in writing, to participate in professional discussions.

Student workload

The total volume of the discipline is 120 hours. (4 ECTS credits): lectures – 32 hours, practical classes – 16 hours, self-study– 72 hours

Course prerequisites

Successful completion of the course requires critical thinking; a creative approach to solving problems, the ability to work independently, as well as previous courses "Philosophy", "Financial Accounting", "Business Analysis", "Finance"

Features of the course, teaching and learning methods, and technologies

Lectures are conducted using multimedia technologies. Practical classes use a project-based approach to learning, game methods, and focus on the use of information technologies when conducting scientific research.

Program of the course

Topics of the lectures

Topic 1. Science as a system of knowledge. Organization of research work in a higher educational institution

Concepts and functions of science. Historical stages of formation and development of science. Features of modern science. Structure and classification of science. Legislative and regulatory regulation of science in Ukraine. Organization of university science.

Topic 2. Concept of scientific research and requirements for scientific research

Concept of scientific research: main features and characteristics. Requirements for the definition of scientific research. Main types of scientific research.

Topic 3. Methodology of scientific research

Research methodology: the essence of the concept. Fundamental or philosophical methodology. General scientific methodology. General scientific research approaches. Concrete scientific methodology. Research methods and techniques.

Topic 4. Theoretical methods of scientific research

The essence of theoretical methods of scientific research. Characteristics of the main theoretical methods of scientific research. Peculiarities of logical and chronological approaches when conducting theoretical research

Topic 5. Empirical methods of scientific research

Concept and general characteristics of empirical methods of scientific research. Observation as an empirical method of scientific research. Empirical methods: measurement, comparison, generalization. Experiment. Other empirical research methods.

Topic 6. Economic and statistical methods in scientific research

General principles of applying economic and statistical methods in scientific research. Methods of analyzing the state and dynamics of phenomena and processes. Methods of factor analysis. Forecasting and optimization methods

Topic 7. Information support of scientific work

The essence and types of scientific and technical information. Methods of searching and collecting scientific information. Analysis and interpretation of information. Organization of work with scientific literature. Forms of exchange of scientific information. Basic characteristics of the concept of academic writing.

Topic 8. Computer technologies in scientific research

The concept of an automated information processing system (ASI). Modern computer technologies and the Internet in economic research. MS Excel "Data Analysis" package.

Topic 9. Content and components of the research process

Algorithm of scientific research process. The organizational stage of the research process. Experimental stage of the research process. The final stage of the research process. Effectiveness of scientific research

Topic 10. Forms of displaying the results of scientific research

Forms of presentation of research materials and scientific publications. Forms of covering the results of scientific work and displaying the results of the GDR. Academic text: organization and technologies of work. Oral transmission of information about scientific results.

Topic 11. Methodology of preparation and design of master's work

The main stages of the master's thesis. Designing a master's thesis. Recommendations for defense.

Topic 12. Academic integrity as an important competence of higher education applicants

Academic integrity as a guarantee of quality higher education. Academic culture: concepts, functions, components. Concept of plagiarism in Ukraine and the world. Types of plagiarism.

Topics of the Practical classes

Topic 1. Science as a system of knowledge. Organization of research work in a higher educational institution

Topic 2. Concept of scientific research and requirements for scientific research

Topic 3. Methodology of scientific research

Topic 4. Theoretical methods of scientific research

Topic 5. Empirical methods of scientific research

Topic 6. Economic and statistical methods in scientific research

Topic 7. Information support of scientific work

Topic 8. Computer technologies in scientific research

Topic 9. Content and components of the research process

Topic 10. Forms of displaying the results of scientific research

Topic 11. Methodology of preparation and design of master's work

Topic 12. Academic integrity as an important competence of higher education applicants

Self-study

The course involves writing a test paper. For its completion, students are recommended to use additional materials (methodological instructions). As for the independent work, it is recommended to familiarize yourself with academic integrity

Course materials and recommended reading

Basic literature

1. Younis, Ghadi. (2021). Scientific Research - basics. 10.13140/RG.2.2.17653.70881.
2. Accounting, auditing and taxation: theory and practice [Electronic resource]: training. manual / T. V. Davidyuk [etc.] ; general ed. T. V. Davidyuk; National technical University "Kharkiv Polytechnic Institute". - Electron. text. data. - Kharkiv, 2021. - 607 p. - URI: <http://repository.kpi.kharkov.ua/handle/KhPI-Press/52695.3>. Methodology of

- scientific research: teaching. manual / V. I. Zatserkovny, I. V. Tishaev, V. K. Demidov. – Nizhyn: NSU named after M. Gogol, 2017. 236 p
3. Robert V. Smith Principles of Scientific Research. https://link.springer.com/chapter/10.1007/978-1-4899-7410-5_5
4. Methodology and organization of scientific research: teaching method. edition. / O.V. Galyan. Lutsk: Tower-Print, 2021. 26 p.
5. Methodology of scientific research: educational and methodological manual / Kotlovy S.A., Pavlyk N.P., Seiko N.A., Sytnyakivska S.M. Zhytomyr: Publication of ZhDU named after I. Franka, 2023. 89 p.
6. Methodology of scientific research: basic concepts, tests and instructional and methodological instructions for their implementation: [educational and methodological manual]. Zhytomyr: ZhDU Publishing House, 2023. 17 p.
7. Fundamentals of scientific research [Electronic resource]: text of lectures / comp. N. Yu. Yershova. - Electron. text. data. - Kharkiv: 2024. 46 p.
8. Academic writing: teaching. manual / arrangement Revutska S.K., Zinchenko V.M. Kryvyi Rih, 2019.

Auxiliary:

9. Iershova N., Portna, O., Tretyak V., Moskalenko J., Vasyliiev O. Crisis Management: Innovative Financial and Accounting Technologies. TEM Journal. 2021. 10(2).
10. Yershova N., Grinko A. Accounting and analytical support for making financial decisions in the management of the solvency of the enterprise. Bulletin of the National Technical University "Kharkiv Polytechnic Institute" (economic sciences), 2023, (2), 23–30. <http://es.khpi.edu.ua/article/view/282769>
11. Iershova N. Y. Information and accounting support for investment analysis of business for management decision making in industry 4.0 / N. Y. Iershova, O. I. Lynnyk // Bulletin of the National Technical University "KhPI" (economic sciences) economic sciences): coll. of science pr. – Kharkiv: NTU "KhPI", 2021. – No. 1. – P. 25-31.. 2021. doi: 10.20998/2519-4461.2021.1.25 http://repository.kpi.kharkov.ua/bitstream/KhPI-Press/56842/3/visnyk_KhPI_2021_01_EN_Iershova_Informatsiino-oblikove.pdf
12. Yershova N. Yu. Analysis of liquidity risks of enterprises in the hotel and restaurant business sphere / N. Yershova // Results of scientific conferences of the Educational and Scientific Institute of Economics, Management and International Business of NTU "KhPI" for 2020: in 2 vols. T 1. Research and optimization of economic processes "Optimum-2020": tr. 16th International science and practice conference, December 2-4, 2020 / ed. E. M. Stokov; National technical Kharkiv Polytechnic University [etc.]. - Kharkiv: Yu. I. Tomenko, 2020. - P. 132-135 <https://repository.kpi.kharkov.ua/handle/KhPI-Press/53376>

INTERNET RESOURCES

13. Page of the State Statistics Committee of Ukraine [Electronic resource]. – Access mode: <http://www.ukrstat.gov.ua>.
14. Internet search services [Electronic resource]. – Access mode: <http://www.kinder.mksat.net/pages/libfindix/inetfind.htm>.
16. Methodology of scientific research https://www.youtube.com/watch?v=_aVkpQvS3BU
17. International rules of citation and references in scientific works: methodical recommendations / authors-compilers: O. Bozhenko, Yu. Koryan, M. Fedorets; editorial board: V.S. Pashkova, O.V. Voskoboynikova-Guzeva, Y.E. Soshinska, O.M. Brui; Scientific and technical library named after G. I. Denysenko National Technical University of Urayna "KPI named after Ihor Sikorskyi"; Ukrainian Library Association. – Kyiv: UBA, 2016. https://ula.org.ua/images/uba_document/programs/academ_integrity/Academ_4_12_red1.pdf
18. Robert V. Smith Principles of Scientific Research. https://link.springer.com/chapter/10.1007/978-1-4899-7410-5_5
19. Types of Scientific Research <https://innspub.net/types-of-scientific-research/>
20. Basics of Scientific Research. https://tyonote.com/scientific_research/.

Assessment and grading

Criteria for assessment of student performance, and the final score structure

The academic success of a student of higher education is determined by the criteria and the system for evaluating the knowledge and skills of students, which is used in the National Technical University "KhPI"

(<https://blogs.kpi.kharkov.ua/v2/nv/wp-content/uploads/sites/43/2024/01/Polozhennya-pro-kryteriyi-otsinyuvannya-znan-ta-vmin-i-pro-rejtyng-zdobuvachiv.pdf>)

Current control is carried out during practical classes, as well as control works.

The final control is carried out based on the results of the assessment or as a result of the accumulation of grades on individual topics in the event that the applicant performs all types of current control measures.

Under the conditions of the candidate's performance of the control work in the academic discipline at the control event, but in the absence of the results of the current control (practical classes), the candidate cannot be certified in the academic discipline until he liquidates the current debt.

The calculated value in the quantitative form of the final assessment is determined by the formula:

$$O = \sum (K_i \times O_i) / \sum K_i$$

where K_i is the number of credits and topic (type of classes, etc.); O_i - assessment in quantitative form (points) from the i -th topic (type of classes, etc.).

Distribution of credits by types of classes in the discipline

Type of occupation	Кількість кредитів
Control works are modular (2 by 0.5)	1.0
Practical classes	
Topic 1.	0.2
Topic 2.	0.2
Topic 3.	0.2
Topic 4.	0.2
Topic 5.	0.2
Topic 6.	0.2
Topic 7.	0.2
Topic 8.	0.2
Topic 9.	0.2
Topic 10.	0.2
Topic 11.	0.2
Topic 12.	0.2
Control work	0.6

Grading scale

Total points	National	ECTS
90–100	Excellent	A
82–89	Good	B
75–81	Good	C
64–74	Satisfactory	D
60–63	Satisfactory	E
35–59	Unsatisfactory (requires additional learning)	FX
1–34	Unsatisfactory (requires repetition of the course)	F

Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management. Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

Approval

Approved by	Date, signature	Head of the department Oleksandr MANOYLENKO
	Date, signature	Guarantor of the educational program Tetiana NAZAROVA