NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE FACULTY OF AGRARIAN MANAGEMENT PRODUCTION AND INVESTMENT MANAGEMENT DEPARTMENT

COURSE TRAINING PROGRAM OF THE EDUCATIONAL DISCIPLINE

Methodology and Organization of Scientific Research with the Principles of Intellectual Property (English Language Teaching)

(title of the educational discipline)

Specialty
Specialization

073 «Management»

Specialization

"Management of Investment Activities and International Projects"

Faculty

Agrarian Management

Developed by:

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1. Description of the discipline

Methodology and Organization of Scientific Research with the Principles of Intellectual Property

Field of knowledge, speci	Master			
Specialty	073 «Management»			
Educational program	"Management of Investment Activities and International Projects"			
Characteris	tics of the educational di	scipline		
Туре	Compulsory			
Total quantity of hours	120			
Quantity of ECTS credits	4			
Number of content modules	2			
Coursework	-			
Form of control	Exam			
Indices for	Day department	External form		
Year of preparation (course)	1	External form		
Semester	2			
Lectures	15 hours			
Practical classes	15 hours			
Labor classes	-			
Self-study	90 hours			
Individual tasks				
Number of weekly hours	2hours			
for full-time study form:				
classroom -				

2. Purpose, tasks, and competencies of the discipline

The discipline "Methodology and organization of scientific research with the principles of intellectual property" is a compulsory course for the "Master" degree for Specialty 073 "Management" full-time study.

The **main purpose** of teaching the discipline "Methodology and organization of scientific research with the principles of intellectual property" is to provide students with fundamental theoretical knowledge of research methodology. They obtain practical

skills in conducting scientific research, as well as providing skills to work with the regulatory framework relations in the field of intellectual property.

This knowledge will enable the future specialist to independently formulate objectives of research and create theoretical hypothesis, data collection, report writing. Moreover, the discipline provides students with an understanding of the concepts and techniques of qualitative and quantitative research used in management and social sciences, grants for research, requirements for writing scientific publications (articles), and the Master's research paper.

The curriculum includes methods, techniques, instruments, and processes of conducting scientific research, and implementation of the results in the management of organizations and international projects.

The **main task** of teaching the discipline "Methodology and organization of scientific research with the principles of intellectual property" is the theoretical training of:

- the essence of concepts and categories of research methodologies;
- organization of the research process;
- selection of objects of scientific research;
- application of theoretical and empirical research methods;
- research methods, their content and principles of development;
- planning of research works;
- development of stages and forms of the research process;
- organization of Master's research work;
- fundamentals of academic integrity;
- specifics of scientific knowledge;
- typology of methods of scientific cognition;
- content and structure of the research process;
- formation and substantiation of scientific hypotheses;
- mastering traditional and modern innovative research methods;
- registration of results of scientific researches and their implementation in practice;
- information maintenance of research process;
- intellectual property for scientific achievements.

The **object** of the discipline is the process of scientific research.

The **subject** of the discipline is the theoretical foundations of methodology and practical recommendations for the organization of research process.

As a result of studying the discipline, the student have to

know:

- the essence of concepts and categories of research methodology;
- dialectical and logical bases of scientific knowledge;
- the specifics of the application of theoretical and empirical research methods;
- main stages and forms of the research process;
- typology of methods of scientific cognition;
- features of the organization of Master research work;
- types of systematization of research results and their content.

be able:

- formulate the topic, purpose and tasks of scientific research;
- determine the object and subject of research, choose methods of research;
- search and analyze various sources of information;
- conduct scientific research of management systems;
- apply modern methods and techniques in research;
- plan and organize scientific experiments;
- apply automated information processing systems in research;
- prepare for publication the results of their own research.

Competences obtained through the academic discipline general competencies (GS):

GC2. Ability to use information and communication technologies to search, process, analyze information from various sources and make decisions.

professional competencies of the specialty (PCS):

PCS11. Ability to plan and conduct scientific and applied research, prepare the results of scientific work for publication.

Program Learning outcomes (PLO):

- PLO1. Ability to develop and justify the project concept and conduct pre-investment research.
- PLO5. Ability to ensure project implementation.
- PLO8. Ability to use modern experience of international business and investment management practices to make effective management decisions.
- PLO9. Ability to critically evaluate project proposals taking into account their innovation and investment attractiveness.
- PLO10. Ability to select sources of project funding.

3. Program and structure of the discipline "Methodology and Organization of Scientific Research with the Principles of Intellectual Property"

CONTENT MODULE 1. THEORETICAL AND METHODOLOGICAL BASIS OF SCIENTIFIC RESEARCH

Topic 1. Theoretical Foundations and Methodology of Scientific Research

Scientific research: meaning, features, purpose and role. Scientific methods and methodology. Types of research: fundamental and applied research, descriptive and analytical, correlation research, explanatory research, quantitative and qualitative research, other types of research (historical, diagnostic, educational ect) Limitations of social science research. Difference between social science research and physical science research. Significance of economic research. Global crises and the problem of the importance of scientific and technological progress.

Topic 2. The Conceptual Framework of Research Process

Research process. Formulating the research problem. Extensive literature survey. Development of working hypotheses. Preparing the research design. Determining sample design. Collecting the data. Execution of the project. Analysis of data. Hypothesis testing. Generalization and interpretation. Preparation of the report. Qualities of good research. Evaluation of good research. Role of computer technology in research. Project cost management. Introduction to a various funding agencies and research grants. Writing a research project and procurement of research grant.

Topic 3. Data Collection and Analysis in Scientific Research

Data, information and statistics. Data types Qualitative and Quantitative. Cross and time series. Scales of measurement: nominal, ordinal, interval, ratio. Sources of data: primary and secondary. Data collection methods. Methods of collecting primary data: observation, interview, schedules and questionnaires, case study. Framing questionnaire and interview schedule for socio-economic exploratory surveys. Methods of collecting secondary data. Presentation and preliminary analysis of data. Sample size, sampling procedure and methods. Data processing and graphical representation of data. Use of statistical softwares/ packages in data analysis.

Topic 4. Hypothesis: Nature and Role in Research

Meaning of hypothesis. Role of hypothesis. The functions of hypothesis. Types of hypothesis: based on their functions, nature and level of abstraction. Sources of hypothesis. Characteristics of a good hypothesis. Variables in a Hypothesis. Formulating a Hypothesis. Basic concepts in hypothesis testing (parametric and non-parametric tests), types of errors and their control. Hypothesis in qualitative research.

CONTENT MODULE 2. FEATURES OF THE ORGANIZATION OF STUDENT RESEARCH AND FUNDAMENTALS OF INTELLECTUAL PROPERTY

Topic 5. Technical Writing and Reporting of Research

Meaning and significance of a research report. Types of research report: technical, popular, interim, summary, article. Structure and organization of a research report: title, abstract, key words, introduction, methodology, results, discussion, conclusion, acknowledgement, references, footnotes, tables and illustrations. Principles of writing the research report: organization and style. Impact factor, rating, indexing and citation of journals.

Topic 6. Techniques of the Master's Thesis Preparation and Defense. Academic Integrity

Requirements to the object and the filling of masters thesis (definitions, themes). The structure of Master's thesis. General requirements for the Master's thesis: text

processing, formulas and equations, illustrations and tables submitting. Requirements for the References. Conclusions and recommendations. Preparation for the defense of the Master's thesis. Checking for the lack of plagiarism in the Master's thesis. Preliminary defense of Master's thesis. Requirements for the presentation and report. Academic integrity. Research ethics, responsibility and accountability of the researchers. Plagiarism and use of plagiarism detection softwares.

Topic 7. Intellectual Property: Basic Concepts

General concept of intellectual property. The system of legal protection of intellectual property. Sources of intellectual property law. International system of intellectual property protection. Patents for invention. Utility models. Industrial designs. Patent information and patent protection in various countries. The essence and purpose of trademarks. The main function of trademarks. Legal protection of trademarks. Use, disposal and protection of intellectual property rights. Protection against unfair competition. Evolution of intellectual property in Ukraine.

Structure of educational discipline "Methodology and Organization of Scientific Research with the Principles of

Intellectual Property "

Titles of content modules and topics	Quantity of hours												
	Day department			Distant department									
	Weeks	Veeks total including		total including									
			1	р	1	i	S-S		1	П		інд	c.p.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CONTENT MODULE 1. THEORE					OLO	GIC	AL I	BASIS	OF S	SCII	ENTI	FIC	
	_	16	2	2		1	12		1	1			
Topic 1. Theoretical foundations		10	2	2			12						
and methodology of scientific													
research.													
Topic 2. The conceptual framework		16	2	2			12						
of the research process													
Topic 3. Data collection and		16	2	2			12						
analysis in scientific research													
Topic 4. Hypothesis: nature and		16	2	2			12						
role in research													
TOTAL FOR MODULE 1	6	4	8	8			48						
CONTENT MODULE 2. FEATURES		HE OR	GAN	IIZA'	ΓΙΟΝ	OF	STU	DENT	RES	EA	RCH	AND)
FUNDAMENT	ALS O	F INT	ELL	ECT	J AL 1	PRO	PER	TY					
Topic 5. Technical writing and		18	2	2			14						
reporting of research													
Topic 6. Techniques of the Master's		20	3	3			14						
thesis preparation and defense.													
Academic integrity.													
Topic 7. Intellectual property: basic		18	2	2			14						
concepts													
TOTAL FOR MODULE 2	5	6	7	7			42						
Total hours	12		15	15			90						
			6						1		1	1	

4. Topics of seminars

$N_{\underline{0}}$	Title of topic	Amount of				
		hours				
not provided by the curriculum						

5. Topics of practical classes

No	Title of topic	Amount of
		hours
1	Topic 1. The concept and methodology of scientific research in the	3
	modern world	
2	Topic 2. The structure and process of scientific research	2
3	Topic 3. Data collection and analysis in scientific research	2
4	Topic 4. Development and testing of a hypothesis in research	2
5	Topic 5. Writing and reporting of research	2
6	Topic 6. Masrer's thesis preparation and defense	2
7	Topic 7. Basic concepts of Intellectual property	2

6. Topics of labs

No॒	Title of topic	Amount of hours					
	not provided by the curriculum						

7. Test questions, sets of tests to determine the level of knowledge acquisition by students

7.1. Control questions:

- 1. What are the objectives of scientific research?
- 2. Define the features of scientific research.
- 3. Describe the role and need of scientific research.
- 4. Define the methods and methodology of scientific research.
- 5. Types of research: fundamental and applied research.
- 6. Types of research: descriptive and explanatory research.
- 7. Types of research: quantitative and qualitative research.
- 8. Types of research: conceptual and empirical research.
- 9. Distinguish between research in social sciences and research inphysical sciences.
- 10. Write a note on significance of economic research.
- 11. Describe the process of research work.
- 12. Explain various steps involved in research process.
- 13. Formulating the research problem and extensive literature survey.
- 14. What are the qualities of a good research?
- 15. How do you evaluate a research work?
- 16. Explain the role of computer technology in social science research.
- 17. Describe types of data.
- 18. What do you understand by primary data?
- 19. State the important methods of primary data collection.

- 20. What do you understand by secondary data?
- 21. State the main sources of secondary data.
- 22. Describe survey method (scheduling).
- 23. Describe metod Interview.
- 24. Describe exmerimental method.
- 25. The concept of Questionnaire and type of questions.
- 26. Collection of secondary data and their sources.
- 27. Define the nature of Case study.
- 28. Technique for collection of data.
- 29. Explain the attitude measurement techniques.
- 30. Describe data processing.
- 31. Analysis of data and their types.
- 32. How do you classify the types of hypothesis?
- 33. List down the sources of hypotheses.
- 34. List down the points showing characteristics of a good hypothesis?
- 35. What are characteristics of a good hypothesis?
- 36. What do you mean by research report?
- 37. What is the significance of writing research report?
- 38. What are the main types of research report?
- 39. Which are the main parts of the research report?
- 40. Prepare general structure for a research report.
- 41. What is importance of planning for report writing?
- 42. Which steps are necessary in planning for report writing?
- 43. What is outline?
- 44. Differentiate between draft and final research report.
- 45. Explain requirements to the object and the filling of masters thesiss
- 46. State the structure of master"s thesis.
- 47. Describe general requirements for the Master's thesis: text processing, formulas and equations, illustrations and tables submitting.
- 48. Describe the requirements for the References.
- 49. Discover the requirements for conclusions and recommendations.
- 50. Explain the process of preparation for the defense of the master's thesis.
- 51. Checking for the lack of plagiarism in the master's thesis.
- 52. What is the essence of academic integrity?
- 53. Preliminary defense of master's thesis.
- 54. Requirements for the presentation and report.
- 55. Define the concept of intellectual property.
- 56. Describe the justifications for intellectual property law.
- 57. List the sources of intellectual property law.
- 58. Explain the nature of patents for invention. Utility models. Industrial designs.
- 59. Discover patent information and patent protection in various countries.
- 60. State the essence and purpose of trademarks.
- 61. Describe the main function of trademarks. Legal protection of trademarks.
- 62. Evolution of intellectual property in Ukraine.

Tasks for final control

Example of a ticket for the exam

NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES							
	OF UKRAINE						
Master 073 «Management»	Faculty of Agrarian Management Department Production and Investment Management	Exam ticket № 1 on discipline "Methodology and Organization of Scientific	Confirmed Head of Department L.V. Shynkaruk.				
	2020 – 2021	Research with PIP"	2020 y.				
Exam question							
1. Describe the process of research work							
2. State the essence and purpose of Trademarks							

Test tasks of different types

1. Complete the	statement:	Research	describe	the state	of affairs,	as it exists	at
present, the called_	researcher	has n	o cont	rol ove	er the	variables	is

2. **Complete the statement:** Data which are collected for the first time and these are in original in character are called:

- 3. Research is:
- a) Searching social problems
- b) Finding solution to any problem
- c) Working in a scientific way to search for truth of any problem
- d) None of the above
- 4. Which of the following is the first step in starting the research process?
- a) Searching sources of information to locate problem.
- b) Survey of related literature
- c) Identification of problem
- d) Searching for solutions to the problem
- 5. Action research means:
- a) A longitudinal research
- b) An applied research
- c) A research initiated to solve an immediate problem
- d) A research with socioeconomic objective
- 6. A reasoning where we start with certain particular statements and conclude with a universal statement is called:
- a) Deductive Reasoning
- b) Inductive Reasoning

- c) Abnormal Reasoning
- d) Transcendental Reasoning
- 7. When planning to do social research, it is better to:
- a) Approach the topic with an open mind
- b) Do a pilot study before being stuck into it
- c) Be familiar with the literature on the topic
- d) Forget about theory because this is a very practical undertaking can't have one without the other
- 8. We review the relevant literature to know:
- a) What is already known about the topic?
- b) What concepts and theories have been applied to the topic?
- c) Who are the key contributors to the topic?
- d) All of the above
- 9. Document contains a list of questions presented to a respondent for answers is called:
- a) Questionnaire
- b) Simulation
- c) Case-study
- d) Interview

10. Methods of Collecting Primary Data:

- a) Observation
- b) Survey method
- c) Interview
- d) All of above

8. Teaching methods

Business games, problem-solving tasks, preparation of final reports and other methods of activating students' cognitive activity are used to intensify the educational process during the course.

The following educational technologies and means are used to activate the process of students' learning during the study of the discipline:

- the material is clearly structured at lectures; students' attention is focused on problematic issues; specific examples of practical application of the acquired knowledge are given; students are encouraged to critically perceive new material instead of passive annotation; visual materials, schemes, tables, models, graphs are used; technical teaching aids are used: multimedia projector, slides, etc.;
- various educational technologies are introduced in practical classes: performance of practical tasks by appropriate software; analysis, interpretation and discussion of the obtained results; brain storm; presentations; work in small groups; written control of knowledge; individual and group survey; cross-checking of tasks with the subsequent argumentation of the given assessment, etc.

Mandatory elements of intensification of students 'educational work are clear control of students' attendance, encouragement of educational activity, fair differentiation of grades.

Lesson planning involves the creation of prerequisites for the implementation of the following methodological principles of the educational process:

- intensive use of self-study student work (preparatory stage for the implementation of practical tasks and interpretation of the results);
 - active use of software to perform practical tasks;
- compliance with strict regulations: determining the time for individual work and discussion of the results;
- introduction of the principle of rationing: observance of norms and rules at performance of test tasks and practical tasks;
- active support of intra-group interaction of students, involvement in the implementation of practical tasks and discussion of the results.

9. Forms of control

The form of control of students' knowledge in the discipline "Methodology and organization of scientific research with BIP" is an exam.

According to the "Regulations on examinations and tests in NULES of Ukraine' (order of entry into force of 27.12.2019 № 1371) the types of control of higher education are current control, formative and final assessment.

Assimilation of the content module material by student is considered successful if his rating is not less than 60 points on a 100-point scale.

After conducting formative assessment of content modules and determining their ratings, the lecturer of the discipline determines the rating of student's academic work of PHP (not more than 70 points) according to the formula:

 $\mathbf{R^{(1)}_{CM}}$, ... $\mathbf{R^{(n)}_{CM}}$ – rating evaluations of content modules on a 100-point scale;

n − number of content modules;

 $K^{(1)}_{CM}$, ... $K^{(n)}_{CM}$ — the number of ECTS credits provided by the curriculum for the relevant content module;

 κ_{DIS} - the number of ECTS credits provided by the curriculum for the discipline in the current semester.

This formula can be simplified if accepted $K^{(1)}CM = ... = K^{(n)}CM$:

$$R_{AW} = \frac{0.7 \cdot (R^{(1)}CM + R^{(n)}CM)}{n}$$

Students are required to take exams and tests by the requirements of the curriculum according to the schedule of the educational process. The content of exams and tests is determined by the course training program of disciplines.

The rating on academic work can be influenced by the rating on additional work and the penalty rating. The additional work rating is added to the academic rating and cannot exceed 20 points. It is determined by the lecturer and is provided to students by the decision of the Department for work that is not provided for in the curriculum, but contributes to improving their knowledge of the discipline.

Penalty rating does not exceed 5 points and is deducted from the rating of educational work. It is determined by the lecturer and is introduced by the decision of the Department for students who didn't learn the materials of content modules, didn't follow the work schedule, missed classes and so on.

The estimated rating of the discipline is 100 points. Rating on academic work - 70 points, rating on exam - 30 points.

Current Content module1	Content module 2	Rating of academic work Raw	Rating of additional work Radw	Penalty rating Rp	Exam	Total
0-100	0-100	0-70	0-20	0-5	0-30	0-100

10. Distribution of points received by students

Assessment of student knowledge is on a 100-point scale and is translated into national assessments according to table. 1 "Regulations on examinations and tests in NULES of Ukraine" (order of entry into force of 27.12.2019 № 1371)

Student rating, points	National assessment based on the results of the compilation				
points	exams	tests			
90-100	Excellent				
74-89	Good	Credited			
60-73	Satisfactory				
0-59	Unsatisfactory	Not credited			

The "Excellent" grade to be awarded to a student who has completely acquired the studying material, and is able to present it logically. The theory should be connected with practice. A student provides a background to correct answers, possesses different methodological skills and is able to solve additional exercises.

The "Good" grade is dedicated to a student who has acquired the studying material, provides mostly correct answers, being able to use theoretical approaches at exercising of practical cases.

The grade "Satisfactory" to be conferred to a student who has learned only studying materials, but not in details; there are some mistakes made, not thorough implementation in doing exercises and non-consecutive in responses.

To be evaluated with the grade "Unsatisfactory" a student has not learned a most of studying materials, allows fatal errors and is slow with practical exercises solutions.

11. Methodological support

The educational and methodological complex of studying the discipline "Metodology and Organization of Scientific Research with PIP" includes course training program of the discipline, course of lectures, illustrative materials.

12. Recommended literature

– basic

- 1. Bhattacherjee, Anol, Social Science Research: Principles, Methods, and Practices (2012). USF Open Access Textbooks Collection. Retrieved from: http://scholarcommons.usf.edu/oa textbooks/3.
- 2. Caldwell Bruce J. (2003) Beyond Positivism: Economic Methodology in the Twentieth Century, Revised Edition, London. 279 p.
- 3. Creswell, J. W. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Sage Publications, Inc; 2nd edition, 2002.
- 4. Denscombes, M. (2010). The Good Research Guide: For small-scale social research projects. Maiden-Read: Open University Press.
- 5. Igwenagu, Chinelo. (2016). Fundamentals of research methodology and data collection. Retrieved from: https://www.researchgate.net/publication/303381524_Fundamentals_of_research_m ethodology and data collection
- 6. Kothari, C.R.(2009) Research Methodology, New Age International Pvt Ltd Publishers.
- 7. Kumar, R. (2010) Research Methodology: A Step-by-Step Guide for Beginners, SAGE PublicationsLtd; Third Edition edition.
- 8. Marczyk, Geoffrey R.(2014) Essentials of research design and methodology. Wiley. 290 p.
- 9. Taha H. (2011) Operations Research: An Introduction (9th ed.). Prentice Hall.

additional

- 1. Bell, J. (2010) Doing your research project: a guide for first-time researchers in education, health and social science. 5th ed.
- 2. Berry, R. (2004) The research project: how to write it. 5th ed. Abingdon: Routledge. 808.066 BER
- 3. Cohen, L., Manion, L. & Morrison, K. (2011) Research methods in education. 7th ed. London: Routledge. 370.72 COH & e-book
- 4. Fabb, N. & Durant, A (2005) How to write essays and dissertations: a guide for English literature students. 2nd ed. Harlow: PearsonLongman. 808.066 FAB

- 5. Gibaldi, Joseph. (2003) MLA Handbook for Writers of research projects. 6th ed. NewYork: MLA.
- 6. IGNOU (2001) Research Methods for Distance Education. ES315 New Delhi STRIDE
- 7. Ikekhua, T. I. and Yesufu, J. T. (1995) Exposing Research Methods in Education Study and reporting aid for students and Beginning Researchers. Warri, Agbon & Botawokerare Publishers.
- 8. Jarvis, P. (2012) Research in the early years: a step-by-step guide. Harlow: Pearson-Education. 372.21072 RES
- 9. Mauch, J. E., Birch, J. W. (1998) Guide to the successful thesis and disertation. New York: Marcel Dekker, 455 s. ISBN 0-77021-882-9
- 10.N.O.U.N. (2004) EDU 702: Educational Research Methods. N.O.U.N. Lagos.
- 11. Roberts-Holmes, G. (2011) Doing your early years research project: a step-by-step guide. 2nd ed. London: SAGE. 372.21072 ROB
- 12.Robson, C. (2007) How to do a research project: a guide for undergraduate students. Oxford: Blackwell. 808.0663 ROB
- 13. Sharp, J. (2012) Success with your education research project. 2nd ed. London: SAGE. 370.72 SHA

13. Informational resources

- 1. Constitution of Ukraine (28.06.1996). Retrieved from: https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text
- 2. On copyright and related rights: The Law of Ukraine of 23.12.1993. № 3792-XII. Retrieved from: https://zakon.rada.gov.ua/laws/show/3792-12#Text
- 3. On Protection of Rights to Trademarks for Goods and Services. The Law of Ukraine of 15.12.1993. № 3689-XII. Retrieved from: https://zakon.rada.gov.ua/laws/show/3689-12#Text
- 4. On Protection of Rights to Inventions and Utility Models. The Law of Ukraine of 15.12.1993. № 3687-XII у ред. від 01.06.2000 р. Retrieved from: https://zakon.rada.gov.ua/laws/show/3687-12#Text
- 5. On Protection of Rights to Industrial Designs. The Law of Ukraine: Закон України від 15.12.1993. № 3688-XII (зі змінами та доповненнями). Retrieved from: https://zakon.rada.gov.ua/laws/show/3688-12#Text
- 6. Protection of intellectual property rights: marks for goods and services, patents, inventions, utility models. Retrieved from: http://sdip.kiev.ua
- 7. Ukrainian Institute of Scientific and Technical Expertise and Information. Retrieved from: http://www.uintei.kiev.ua
- 8. Official site of the National Library of Ukraine named after V.I. Vernadsky. Retrieved from: http://www.nbuv.gov.ua