MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY NATIONAL AGRARIAN UNIVERSITY

Department of Management

	«	CONFIRMED»
Acting Head of Mana	0	-
	(L	.I. Mykhailova)
«	>>	2019

CURRICULUM

Methodology of conducting scientific researches

Degree: Doctor of Philosophy

Specialty: <u>073 – «Management»;</u>

091 - «Biology»;

133 – «Industry engineering»;

181 – «Food technology»;

201 – «Agronomy»;

202 - «Protection and quarantine of plants»;

204 – «Technology of production and processing of livestock

products»;

211 – «Veterinary medicine»

Faculty: department of postgraduate and doctoral studies

Curriculum of the discipline «Methodology of conducting scientific researches»
was worked out for the first-year students ED «Doctor of Philosophy», specialty
073 – management; 091 – biology; 133 – industry engineering; 181 – food
technology; 201 – agronomy; 202 - plant protection and quarantine; 204 –
technology of production and processing of livestock products; 211 – veterinary
medicine

Elaborated by: Mykhailov A.M., Assoc. Prof., Dr.S. (econ), Professor of department of Management.

Curriculum is reviewed during the meeting of the department of Management. Protocol N_2 1 dated from 27 August 2019.

Acting Head of De	partment of Management	L.I. Mykhailova
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Agreed:

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1. Description of the Course

Indicators	Branch of knowledge,	Characteris	tics of course	
Indicators	training direction, qualification level	Full-time Studying	Part-time Studying	
Number of credits - 3	Branch of knowledge: Management and Administration, Biology, Mechanical Engineering, Manufacturing & Technology, Agrarian Sciences & Food, Veterinary Medicine	_	the curriculum	
Number of modules: 2	Specialty:		nic year	
	073 – management; 091 – biology; 133 – industry engineering; 181 –	Year of studying		
	food technology;	1		
	201 – agronomy; 202 - plant protection and quarantine; 204 –	Semester		
	technology of production and	2		
Hours: Total - 90	processing of livestock products; 211 – veterinary medicine	Lectures		
		12 hrs		
			seminars	
Hours per week:	Educational degree:	12 hrs.		
Classroom activities hours –	Doctor of	Laborat	ory work	
3	Philosophy	- Individa	ual work	
Individual work - 3		66 hrs.	ual WUIK	
		00 1118.		
		Final control	form: credit	

2. Aim and Tasks

The purpose of discipline - is a preparing and attracting students to carry out research activities, familiarizing them with the strategy and tactics of conducting research, giving them certain knowledge about the methodology, methodology and tools of research and preparation of their publications, qualification papers; teaching students to apply in research methods for analyzing information sources and organization of scientific work.

The main tasks of the discipline - to form the system and expand the range of knowledge in the research methodology to students, provide them with the necessary knowledge and practical skills in economic, social and legal research, promote creative understanding of the need to develop and solve problems, apply research methods that will promote the development of professional skills in relation to formulation and presentation of the results of the research conducted..

As a result of academic discipline's study of a student should:

know: concept of science and scientific activity; organization of scientific activity in Ukraine; principles of organization of research work in higher educational institutions; methodological and methodical principles of scientific research; concept and procedure for conducting scientific research; the order of choice, the formulation of the problem and the topic of scientific research; program of sociological research; sources of information search and material selection; stages of the scientific research plan formulation; the basic approaches of application of computer technologies in scientific researches; the procedure for designing and implementing the results of scientific research in practice.

be able: to own methods and techniques of scientific research; to have the forms and principles of organization of research work; organize the work of the research team; to analyze the actual problems of the development of economic science and criteria for selecting the direction of scientific research; search and study scientific literature; formulate the object and subject of scientific research; carry out own sociological research; generalize the results of the conducted researches; write essays, scientific articles, abstracts, reports, present the results of their own research; review research by various scholars; apply the acquired knowledge for further scientific activity, as well as in the study of other disciplines.

3. Program of Discipline

(is on testing)

Module 1. Specificity and organization of scientific research work Topic 1. The role and tasks of science in the modern world

The concept of science; Functions of science; Value and importance of science; Subjects of research and activities in the institution of higher education; Organization of science in the institution of higher education; Organization of the research group; The role and tasks of science in the modern world.

Topic 2. Basics of scientific research and its application.

The concept of research; Objectives of research; Motivation in research; Types of research; Research approaches; Information support research.

Topic 3. The research process and its Information support

The concept of the research process; Forming the main stages of the research process; Formulating the research problem; Formulating the research problem; Extensive literature survey; Development of working hypotheses; Preparing the research design and determining sample design; Collecting the data and execution of the project; Analysis of data and hypothesis testing; Generalizations, interpretation and preparation of the report or presentation of the results; The process of gathering information and data for scientific research. Organization and conduction of the sociological research.

Module 2. Methodical and methodological principles of scientific research, designing of scientific research results

Topic 4. Methodological bases of research topics' and research problems' sources.

The concept of primary sources; The methodological bases of using the secondary sources; Tertiary sources; Characteristics of a good project (research) topic; Organization of students' scientific research work.

Topic 5. Hypothesis in research.

Definition of the hypothesis; Sources of hypothesis; Characteristics of a workable or usable hypothesis; Types of hypothesis; Role of hypothesis; Designing of scientific research results.

Topic 6. The process of gathering information and data for scientific research. Organization and conduction of the sociological research

The ways of gathering information and data; Interviews, their types and factors that might affect the outcome of any particular interview; The concept of focus groups and the approach of their usage on practice; Participant observation; Questionnaires; Key points of questionnaires; Advantages and disadvantages of open and closed questions; Rules for designing questionnaires; Size and sampling of questionnaires; Response rates of questionnaires; Peer reviewing of scientific papers; Organization of scientific activity in different countries.

4. Structure of the Course

Name of content modules and topics		Number of hours				
_		full-time education				
	Total	including				
		L	P	Lab	Ind	I.W.
1	2	3	4	5	6	7
Module 1. Specificity and	organizatio	n of scie	entific r	esearch	work	
Topic 1. The role and tasks of science in the modern world.	37	2	2		33	
Topic 2. Basics of scientific research and its application.	4	2	2			
Topic 3. The research process and its Information support	4	2	2			
Total for module 1	45	6	6		33	
Module 2. Methodical and methodo	logical princi	iples of	scie ntif	ic resear	ch, desig	gning of
scien	tific research	ı result	S			
Topic 4. Methodological bases of research topics' and research problems' sources	4	2	2			
Topic 5. Hypothesis in research.	4	2	2			
Topic 6. The process of gathering information and data for scientific research. Organization and conduction of the sociological research	37	2	2		33	
Total for module 2	45	6	6		33	
Individual task						
Total hours for the course	90	12	12	-	66	

5. Topics and plans of lectures

#	Name of topics	Quantity of hours
1.	Topic 1. The role and tasks of science in the modern world	2
	Plan	
	1. The concept of science.	
	2. Functions of science.	
	3. Value and importance of science.	
	4. Subjects of research and activities in the institution of higher	
	education.	
	5. Organization of science in the institution of higher education	
2.	Topic 2. Basics of scientific research and its application	2
	Plan	
	1. The concept of research.	
	2. Objectives of research.	
	3. Motivation in research.	
	4. Types of research.	
	5. Research approaches.	
3	Topic 3. The research process	2
	Plan	
	1. The concept of the research process.	

	2. Forming the main stages of the research process.	
	2.1. Formulating the research problem.	
	3. Formulating the research problem	
	3.1. Extensive literature survey.	
	3.2. Development of working hypotheses.	
	3.3. Preparing the research design and determining sample design.	
	3.4. Collecting the data and execution of the project.	
	3.5. Analysis of data and hypothesis testing.	
	3.6. Generalizations, interpretation and preparation of the report or	
	presentation of the results.	
4	Topic 4. Methodological bases of research topics' and research	2
	problems' sources	_
	Plan	
	1. The concept of primary sources.	
	2. The methodological bases of using the secondary sources.	
	3. Tertiary sources.	
	4. Characteristics of a good project (research) topic.	
5	Topic 5. Hypothesis in research	2
	Plan	_
	1. Definition of the hypothesis.	
	2. Sources of hypothesis	
	3. Characteristics of a workable or usable hypothesis.	
	4. Types of hypothesis.	
	5. Role of hypothesis.	
6	Topic 6. The process of gathering information and data for scientific	2
	research. Organization and conduction of the sociological research	_
	Plan	
	1. The ways of gathering information and data.	
	2. Interviews, their types and factors that might affect the outcome of any	
	particular interview.	
	3. The concept of focus groups and the approach of their usage on	
	practice.	
	4. Participant observation.	
	5. Questionnaires.	
	5.1. Key points of questionnaires.	
	5.2. Advantages and disadvantages of open and closed questions.	
	5.3. Rules for designing questionnaires.	
	5.4. Size and sampling of questionnaires.	
	5.5. Response rates of questionnaires.	
—	Total:	12
	i viai.	14

6. Topics of practical classes

#	# Name of topics			
1	Topic 1. Organization of the research group.	2		
2	Topic 2. Information support research	2		
3	Topic 3. The process of gathering information and data for scientific research. Organization and conduction of the sociological research.	2		
4	Topic 4. Organization of students' scientific research work.	2		
5	Topic 5. Designing of scientific research results.	2		
6	Topic 6. Peer reviewing of scientific papers.	2		
	Total	12		

7. Independent work

#	Name of topics	Quantity of hours
1	Topic 1. The role and tasks of science in the modern world.	33
2	Topic 2. Organization of scientific activity in different countries.	33
	Total	66

8. Individual tasks

- 1. To write the abstracts of a scientific presentation on the topic of research and to take part in the conference.
 - 2. Make a plan of a scientific article based on the results of their own research.
 - 3. To write the abstract on the topic of dissertation work.
 - 4. To substantiate methods of scientific researches for fulfillment of separate tasks.
 - 5. To develop the detailed plan of the dissertation research.
- 6. Prepare a scientific article for publication in a professional edition (in a magazine indexed by Scopus or Web of Science) based on the results of studying methodological approaches to studying the chosen problem.

9. Methods of Training

1. Training Methods for Knowledge:

- 1.1. *Verbal:* narrative, explanation, discussion (heuristic and reproductive), lecture, instruct, work with the book (read, transfer, discharge, scheduling, reviewing, summarizing, making tables, charts, reference compendia etc.).
- 1.2. Visual: demonstration, illustration.
- 1.3. *Practical:* practical work, exercise, production practices.
- 2. Methods for studying the nature of the logic of knowledge.
- 2.1. Analytical
- 2.2. Synthesis
- 2.3. Inductive method
- 2.4. Deductive method
- 3. Methods for studying the nature and level of independent mental activity of students.
- 3.1. *Problem (problem-information)*
- 3.2. Partly-search (heuristic)
- 3.3. Exploratory
- 3.4. Reproductive
- 3.5. Explanatory demonstration
- **4. Active learning methods** use of technical training, brainstorming, debates, roundtables, business and role-playing games, training, use of problem situations, self-knowledge, the use of educational tests and controlling the use of basic lectures.
- **5.** Interactive learning technology the use of multimedia technology.

10. Methods of control

- 1. Rating control of a 100-point scale assessment ECTS.
- 2. An intermediate control during the semester (interim certification).
- 3. Criteria assess of the current work of students:
- the level of knowledge demonstrated in practical classes;
- active in the discussion of issues brought to the class;
- quick control during classes;

- self-study topics in general or specific issues;
- perform analytical calculation tasks;
- writing essays;
- test results;
- writing assignments during the tests;
- production situations, cases and more.
- 4. Direct consideration in the final assessment of student performance of certain individual tasks:
- educational and practical study of the presentation of results and more.

11. Points for the Total Score a Student Gets

	Current	testing and In	ndependent work				
Module 1	Module 2	Personal tasks	Total for modules and personal tasks	Accreditation tests	TOTAL		
T1-3	T4-6	15	85 (70+15)	15	100		
35	35		(70+13)				

Evaluation Criteria and ECTS

NATIONAL	ECTS	DEFINITION OF	POINTS
MARK		ECTS	
excellent	A	90-100 points ("excellent") - (with ECTS - A - almost	90 - 100
		without errors - 95 - 100 points; allowed a small number of	
		errors - 86 - 94 points):	
		- Theoretical part - student systematically provides	
		complete, specific, logical answers as oral and written. Uses	
		more independently selected information on the topic is not	
		limited to material or abstract teaching complex.	
		- Practical part - 100-percent attendance at health facilities	
		(except confirmed valid reasons) and total quality	
		performance of all tasks in accordance with the guidelines.	
		Entry and display of high skills in performing laboratory	
		and practical problems. Independent of the preparatory	
		phase to work on assignments, search for material to	
		perform analytical and situational tasks, compiling	
		individual algorithm decide tasks and situations. Protecting PSI required.	
		- Individual work - timely, complete and efficient	
		implementation of the objectives of training complexes	
		(tests), using sources outside the NMC. Positive	
		performance tests 86-100%.	
		- Individual tasks - timely, complete and high-quality	
		preparation and execution descriptive tasks (jobs),	
		settlement and graphic papers, essays, visual aids, etc	
		Manifestation own initiative in the preparation and	
		execution of individual tasks.	
		- Other criteria for evaluating knowledge - responsibility,	

			1
		intelligence, creative line of work, creative thinking, the	
		ability to express their own opinions and knowledge, the	
		ability to rethink amounts of information, the ability to	
		optimal behaviour in different situations and so on.	
good	В	above average with a few errors:	82 - 89
		- Theoretical part - student gives full, concrete answers as	
		oral and written. May use additional information on the	
		topic, and not limited to material or abstract teaching	
		complex.	
		- Practical part - 80-100% presence and working of missed	
		PSI. Complete quality performance of all tasks in	
		accordance with the guide lines. Entry and display good	
		skills in performing laboratory and practical problems.	
		Possible independent of the preparatory phase to work on	
		assignments, search for material to perform analytical and	
		situational problems. Protecting PSI required.	
		- Individual work - timely, complete and efficient	
		implementation of the objectives of training complexes	
		(tests), you can use additional sources of information.	
		Positive performance tests for 71 - 85%.	
		- Individual tasks - timely, complete and high-quality	
		preparation and execution descriptive tasks (jobs),	
		settlement and graphic papers, essays, visual aids, etc	
		Possible manifestation of his own initiative in the	
		preparation and execution of individual tasks.	
		- Other criteria for evaluating knowledge - responsibility,	
		intelligence, possible manifestation of the creative direction	
		of work, the ability to express their own opinions and	
		knowledge.	
	С	generally work is not very good, with a number of errors	75 – 81
sufficient	D	not bad, but a lot of mistakes	69 – 74
5 0,2210		- Theoretical part - student gives sufficient answer both oral	0, , .
		and written. Limited material outline or teaching complex.	
		- Practical part - 80-100-percent testing missed PSI	
		according to the guidelines. Acquiring and sufficient	
		manifestation skills in performing laboratory practical tasks	
		Protection PSI is not required.	
		- Individual work - timely performance objectives of	
		training complexes (tests). Positive performance tests for 60	
		- 70%.	
		- Individual objectives - Timely preparation and	
		implementation of descriptive tasks (jobs), settlement and	
		graphic papers, essays, visual aids, etc	
		- Other criteria for evaluating knowledge - a manifestation	
		of the desire to gain knowledge on the subject.	
	Е	Enough - performance meets the minimum criteria	60 – 68
insuffic ient	FX	35 - 59 points ("poor") - (with ECTS-FX - need to work	35 – 59
		before you get a positive evaluation).	
	F	1 - 34 points ("poor") - (with ECTS - F - thorough and	1 - 34
		elaborate).	
	· · · · · · · · · · · · · · · · · · ·		

12. Suggested Reading Normative legal acts

- 1. Constitution of Ukraine, 28.06.1996, № 254κ/96–BP [Electronic resource]. (in Ukrainian) Mode of access: http://zakon0.rada.gov.ua/laws/show/254% D0% BA/96-% D0% B2% D1% 80.
- 2. On Copyright and Related Rights [Electronic resource]: Law of Ukraine "On Copyright and Related Rights" dated 23.12.1993, No. 3792-XII // Information from the Verkhovna Rada of Ukraine. 1994. No. 13. P. 64 with amendments and additions. (in Ukrainian) Mode of access: http://zakon4.rada.gov.ua/laws/show/3792-12.
- 3. About higher education [Electronic resource]: Law of Ukraine "On Higher Education" of 01.07.2014 № 1556-VII // Bulletin of the Verkhovna Rada of Ukraine. 2014 No. 37-38. S. 2004 with changes and additions. (in Ukrainian) Mode of access: http://zakon4.rada.gov.ua/laws/show/1556-18.
- 4. On Approval of the Regulations on the Training of Scientific-Pedagogical and Scientific Personnel [Electronic Resource]: Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Regulation on the Training of Scientific-Pedagogical and Scientific Personnel" dated 01.03.1999, No. 309. (in Ukrainian) Mode of access: http://zakon4.rada.gov.ua/laws/show/309-99-%D0%BF.
- 5. On Approval of the Order of Awarding Degrees and Assigning a Scientific Title to a Senior Researcher [Electronic Resource]: Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Order of Awarding Academic Degrees and Assigning the Academic Rank of a Senior Researcher" dated July 24, 2013, No. 567. (in Ukrainian) Mode of access: http://zakon4.rada.gov.ua/laws/show/567-2013-%D0%BF.

Basic

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- 2. Bright Wilson E. An Introduction to Scientific Research / Edgar Bright Wilson. New York, Dover Publications Inc, 2011. 383 p.
- 3. Bryman A. Barriers to Integrating Quantitative and Qualitative Research [Electronic resource] / Alan Bryman // Journal of Mixed Methods Research. Vol. 1. #1, January, 2010. P. 8–22. The mode of access: http://mmr.sagepub.com/content/1/1/8.short?rss=1&ssource=mfc.
- 4. Collis J. Business Research: A Practical Guide for Undergraduate and Postgraduate Students / Jill Collis, Roger Hussey. -4^{th} edition, December 27, 2013. -443 p.
- 5. Dawson C. Practical Research Methods / Dawson Catherine. –New Delhi: UBS Publishers' Distributors, 2012. 315 p.
- 6. Denscombe M. The good research guide: for small scale social research projects / Martyn Denscombe. Maidenhead: McGraw-Hill, Open University Press, 5th edition, 2014. 310 p.
- 7. Durojaye Oyedolapo B. Peace Research Methods / Durojaye Oyedolapo B. National Open University of Nigeria, 2012. 244 p.
- 8. Johnson C. Management Project Guidelines / Johnson C. Bradford: University of Bradford, School of Management, 2014. 72 p.
- 10. Klietsova N. V. Prediction of possible changes in investment of the agricultural sector of Sumy region / N. V. Klietsova // collective monograph: Current issues of modern economy / Part 2. Uman, 2011. P. 163–167. (in Ukrainian)

- 11. Kothari C. R. Research Methodology Methods and Techniques / Kothari C. R. New Delhi: Wiley Eastern Limited, 2011. 112 p.
- 12. Kumar R. Research Methodology A Step-by-Step Guide for Beginners / Kumar Ranjit. 2nd.ed., Singapore: Pearson Education, 2015. 246 p.
- 13. Kunova V. Current Issues of Science and Research in the Global World [Electronic resource] / Vlasta Kunova, Martin Dolinsky. London: Taylor and Frances Group, Uk; CRC Press: Balkema, 2015. 369 p. The mode of access: https://books.google.com.ua/books?id=SA7NBQAAQBAJ&pg=PR9&dq=science+and+research+2014&hl=ru&sa=X&ved=0CBwQ6AEwAGoVChMI6erOoabaxgIVYXdyCh3UBQC9#v=onepage&q=science%20and%20research%202014&f=false.
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- <u>qVaDKKcGkUuLygLAH&usg=AFQjCNHFzviHJbRIwmgqPDQbdadgtX7ykA&bvm=bv.98197</u>061,d.bGg.
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- 27. Vibhute K. Legal Research Methods: Teaching Material [Electronic resource] / Khushal Vibhute, Filipos Aynalem, 2015. 252 p. The mode of access: file:///C:/Users/A4F7~1/AppData/Local/Temp/Rar\$DIa0.463/legal-research-methods.pdf.
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Additional

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