

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY
Faculty of Economics and Management
Management Department

MODULE SYLLABUS
EC 10. Science project management
(compulsory)

Implemented in the “Ecology” Academic Program

Area of specialization 101 “Ecology”


Qualification: PhD
at the third (educational and scientific) level of higher education

Sumy-2021

Author:



Mykhailov A. M., PhD in Economics, Professor, Head of Management Department

Module syllabus viewed and agreed at the Management Department meeting	Minutes № 14 dated June 22, 2021
	Head of Management  <p>(signature)</p> <p><u>Mykhailov A. M.</u> (surname, initials)</p>

Approved by:

Guarantor of the Academic program



I. M. Kovalenko

Dean of the Faculty

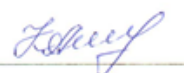


I. M. Kovalenko

Syllabus review (attached) is provided by :



V. G. Skliar



G.O. Klymenko

Syllabus review data:

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program

1. 1. MODULE OVERVIEW

1.	Title	Science project management						
2.	Faculty/Department	Faculty of Economics and Management/Management Department						
3.	Type (compulsory or optional)	<u>Compulsory</u>						
4.	Program(s) to which module is attached	Academic program “ Ecology ” Area of specialization 101 “ Ecology ”						
5.	Module can be suggested for (to be filled in for optional types)	-						
6.	Level of the National Qualifications Framework	third (educational and scientific) level of higher education PhD						
7.	Semester and duration of module	full-time /part-time 1 semester, 5 weeks						
8.	ECTS credits number	3						
9.	Total workload and time allotment	Directed study					Self-directed study	
		Lectures		Practicals		Labs		
		full-t. 24	part-time	full-time 16	part-time	full-time	part-time	full-time 50
10.	Language of instruction	Ukrainian, English						
11.	Module leader	Mykhailov Andriy Mykolajovych, PhD in Economics, Professor, Head of Management Department Official consulting hours – every Tuesday, 12:15p.m., room 302 e						
11.1	Module leader contact information	amykhaylov79@gmail.com						
12.	Module description	The discipline “Scientific Projects Management” is an important part of the training of PhD students, forms a block of knowledge, skills and competencies necessary for the formation of a mechanism for scientific projects managing of various various industry focus, the formation of theoretical and practical basis for evaluation of integrated research projects. economic effects, determining the effectiveness of the research project in its various cycles.						
13.	Module aim	Formation of PhD students with a deep understanding of approaches and the necessary amount of knowledge for the development, evaluation and implementation of research projects in various fields, preparing them for independent project analysis in accordance with methods and approaches used in international practice at various levels of scientific management projects.						
14.	Module Dependencies (prerequisites, co-requisites, incompatible modules)	PhD student must master the skills in making informed decisions about self-development and self-improvement by selecting and implementing projects.						
15.	The policy of academic integrity	Applicants for higher education may be held liable for such academic liability for violation of academic integrity, namely: – academic fraud (using the phone during the writing of written works) will lead to re-submission of work; – copying - from the first warning to the cancellation of work; – plagiarism will lead to the cancellation of work						
16.	Link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=4802						

2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

MLOs: On successful completion of the module the PhD student will be able to:	PLOs (indicate the number according to the numbering given in the AP) ¹					How assessed
	PLOs					
	4	5	8	11	13	
<i>MLOs 1. Know the theoretical essence, general characteristics and justification of the expediency of scientific projects managing.</i>	x				x	Multiple choice test
<i>MLOs 2. Understand the acquired knowledge, subject area, using the theoretical basis on the organization of the research project structure and general approaches concerning their planning and control.</i>	x			x		Individual calculation and analytical task
<i>MLOs 3. Anticipate current trends in resource planning, costs and project budget, taking into account its structuring.</i>		x		x		Multiple choice test
<i>MLOs 4. Understand the technology of project activity assessment taking into account resource planning, project budget costs</i>			x			Individual task, project
<i>MLOs 5. Solve complex specialized tasks and practical tasks in the field of international scientific and technical cooperation between the European Union and Ukraine in the context of projects and programs.</i>			x		x	Individual task

PLOs₄. Formulate, research and solve problems of ecology, environmental protection and sustainable use of nature using the scientific method of cognition.

PLOs₅. Independently develop innovative comprehensive research projects in the field of ecology, environmental protection and land use optimization.

PLOs₈. Communicate, including a foreign language, in a dialogue with the general scientific community and the public in the field of ecology, environmental protection and land use optimization.

PLOs₁₁. Demonstrate leadership qualities, responsibility and full autonomy in the implementation of complex research projects.

PLOs₁₃ Be able to carry out a comprehensive analysis of the populations state and develop measures to ensure their protection and rational, inexhaustible use.

¹ Must comply with the Matrix for providing program learning outcomes with the relevant components of the educational program, indicated for compulsory educational components of EP I and II level, for all (compulsory and elective EC) AP III

3. MODULE INDICATIVE CONTENT

Topics. (List of issues to be addressed within the topic)	Distribution of hours			Self-directed study	Learning resources ²
	Directed study				
	Lectures	Practicals	Labs		
<p>Topic 1. <i>General characteristics of project management.</i></p> <ol style="list-style-type: none"> 1. Project and the specifics of project activity. 2. Types of research projects. 3. Research project management system. 4. Goals and principles of research project management. 5. Project management functions. 6. Structure, environment and project participants. 7. Project life cycle according to the approaches of international investors. 8. Stages of the project life cycle according to the approaches of the World Bank, UNIDO, domestic scientists. 	2/-	-/-		4/-	1, 2, 3, 4, 5, 6, 8, 9
<p>Topic 2. <i>Justification of the feasibility of the research project.</i></p> <ol style="list-style-type: none"> 1. Projects of economic, technical and social development of Ukraine, which are supported by international financial organizations. 2. Formation of the investment plan of the project. 3. Assessment of the viability of the project. 4. The essence of the feasibility study of the project. 5. Project analysis based on a comprehensive expertise. 6. Basic concepts that determine the economic value of the project. 7. Scientific aspects of project analysis in accordance with the industry focus. 8. Criteria for assessing the project effectiveness of research projects of various industries. Prospects for international integration of projects in the researched areas. 	2/-	2/-		4/-	1, 2, 3, 4, 5, 6, 8, 9
<p>Topic 3. <i>The main forms of the research project structure organization.</i></p> <ol style="list-style-type: none"> 1. The concept of project organizational structure. 2. Criteria for choosing the organizational structure of the research project. 3. Types of the scientific project organizational structure. 4. Defining the functional responsibilities of the project participants in accordance with the branch direction. 5. Management of research projects using the 	2/-	2/-		4/-	1, 2, 3, 4, 5, 6, 8

² Certain source from the key or additional recommended resources

<p>project external organizational structure.</p> <p>6. Legal registration of scientific projects in the areas of activity.</p> <p>7. Distribution of responsibilities in the research projects.</p>					
<p>Topic 4: <i>General approaches to planning and control of the research projects.</i></p> <p>1. Planning of project implementation in accordance with the branch direction.</p> <p>2. Goals, purposes and types of plans.</p> <p>3. Financial planning for the project.</p> <p>4. Control system of the project observance parameters according to branch direction.</p> <p>5. Development of design and estimate documentation and control over it, taking into account the specifics of the production direction.</p> <p>6. Selection and tasks of the design firms.</p> <p>7. Financing strategies for a research project.</p>	2/-	2/-		4/-	3, 4, 5, 6, 8
<p>Topic 5: <i>Structuring a research project.</i></p> <p>1. Determination of the project structure at the planning stage.</p> <p>2. Components formation of the scientific project structuring according to branch direction.</p> <p>3. Management of individual components of the project.</p> <p>4. Tasks of project structuring.</p> <p>5. The sequence of structuring.</p> <p>6. Determining the structure of the project at the planning stage.</p> <p>7. Grid planning of a scientific project.</p>	2/-	-/-		4/-	1, 2, 3, 4
<p>Topic 6: <i>Planning resources, costs and project budget.</i></p> <p>1. Material and technical preparation of the project.</p> <p>2. Categories of project costs in accordance with the branch direction.</p> <p>3. The order of expenses planning under the project taking into account a production direction.</p> <p>4. Development of the project budget.</p> <p>5. Formation of project financing sources in the areas of the scientific researches.</p> <p>6. The relationship and interaction of the components of the project implementation process.</p> <p>7. Possibilities of making changes to the project budget.</p> <p>8. Optimization of insufficient resources.</p>	2/-	2/-		4/-	1, 2, 3, 4, 5, 6, 8, 9
<p>Topic 7: <i>Monitoring the implementation of a research project.</i></p> <p>1. Control as a basis for project management.</p> <p>2. Types of control over project implementation.</p> <p>3. Technology of project activity evaluation.</p> <p>4. Accounting in the control system in accordance</p>	2/-	2/-		4/-	7, 8, 9,

with the branch direction. 5. Regulation of the project implementation process. 6. Juxtaposition of the performance results and intentions of the investor. 7. Reasons for changes and assessment of the consequences.					
Topic 8: <i>Risk management in the research projects.</i> 1. Project risks and their classification. 2. Principles of project risk management. 3. Causes and factors influencing the dynamics of risks in different areas of production. 4. Methods of risk analysis of a research project in accordance with the branch direction. 5. Assessment of the probability of a risky event. 6. Opportunities to reduce and counter risks.	2/-	2/-		4/-	1, 2, 3, 4, 5, 6, 8
Topic 9: <i>Quality management in the research projects.</i> 1. The concept of project quality management. 2. International norms and quality standards. 3. Project quality assurance management. 4. Costs to ensure the quality of the research project in accordance with the branch direction. 5. Project quality assurance and control. Project quality management plan.	2/-	-/-		4/-	1, 2, 3, 4, 5, 6, 8, 9
Topic 10: <i>International scientific and technical cooperation between the European Union and Ukraine in the context of projects and programs.</i> 1. The European Union modern policy in the field of research projects. 2. International scientific and technical cooperation. 3. Prospects for venture financing of the research projects in Ukraine from international investors. 4. EU Framework Program “Horizon 2020”. 5. International cooperation of Ukraine with the US Civilian Research and Development Foundation (CRDF).	2/-	2/-		4/-	1, 2, 3, 4, 5, 6, 8, 9
Topic 11: <i>Formation and development of the project team.</i> 1. The purpose of creating a project team and the project manager tasks in accordance with the branch direction. 2. Stages of the project group formation. 3. Project coordination group. 4. Personnel management of the project team. 5. Leadership and motivation in the team. 6. Team development taking into account the specialization of the project.	4/-	2/-		10/-	1, 2, 3, 4
Total hours	24/-	16/-		50/-	

4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	Hours	Learning methods (self-directed study)	Hours
1. Know the theoretical essence, general characteristics and expediency substantiation of scientific projects management.	Problem lecture, thematic discussion, “Round Table”, relevant issues discussion	8/-	Self-directed work with the textbook, completion of individual tasks	10/ -
2. Understand the acquired knowledge, subject area, using the theoretical basis for the organization of the structure of the research project and general approaches to planning and control.	Lecture, practical, presentation	8/-	Self-directed work with the textbook, completion of individual tasks	10/ -
3. Anticipate current trends in resource planning, costs and project budget, taking into account its structuring.	Problem lecture, thematic discussion, case-study	8/-	Self-directed work with the textbook, completion of individual tasks	10/ -
4. Understand the technology of the project activities evaluation taking into account resource planning, project budget costs.	Problem lecture, thematic discussion, case-study	8/-	Self-directed work with the textbook, completion of individual tasks	10/ -
5. Solve complex specialized tasks and practical tasks in the field of international scientific and technical cooperation between the European Union and Ukraine in the context of projects and programs.	Problem lecture, thematic discussion, “Round Table”, Brainstorming, case-study, solving of situational tasks.	8/-	Theoretical material treatment, fulfillment calculated tasks	10/ -
<i>Total hours</i>		40		50

5. ASSESSMENT

5.1. Diagnostic assessment (indicated as needed)

5.2. Summative assessment

5.1.1. To assess the expected learning outcomes provided

№	Summative assessment methods	Grades	Deadline
1.	<i>Fulfillment of individual calculation and analytical tasks</i>	10 / 10%	3 week
2.	<i>Multiple choice test</i>	10 / 10%	7 week
3.	<i>Multiple choice test (attestation)</i>	15 / 15%	8 week
4.	<i>Fulfillment of an individual task</i>	5 / 5%	10 week
5.	<i>Fulfillment of an individual task</i>	10 / 10%	12 week
6.	<i>Project (preparation, presentation, defence)</i>	10 / 10%	13 week
7.	<i>Multiple choice test</i>	10 / 10%	14 week
8.	<i>Exam - multiple choice test</i>	30 / 30%	

5.2.2. ASSESSMENT CRITERIA

Component	Unsatisfactory	Satisfactory	Good	Excellent
Fulfillment of individual calculation and analytical tasks	<5 grades	5-6 grades	7-8 grades	9-10 grades
	<i>The basic numerical tasks are not solved</i>	<i>Solve basic numerical tasks using appropriate methods</i>	<i>Solve a number of numerical tasks using appropriate methods</i>	<i>Solve complex numerical tasks using appropriate methods.</i>
Multiple choice test	<5 grades	5-6 grades	8 grades	9-10 grades
	less 60 % correct answers	60 % - 74 % correct answers	75 % - 89 % correct answers	90-100 % correct answers
Multiple choice test (attestation)	<6 grades	7-10 grades	11-12 grades	13-15 grades
	<6 correct answers	7-10 correct answers	11-12 correct answers	13-15 correct answers
Fulfillment of an individual task	<3 grades	3 grades	3-4 grades	4-5 grades
	<i>Task requirements not met</i>	<i>Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue</i>	<i>All requirements of the task are fulfilled</i>	<i>All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered</i>
Fulfillment of an individual task	<6 grades	6-7 grades	7-8 grades	9-10 grades
	<i>Task requirements not met</i>	<i>Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue</i>	<i>All requirements of the task are fulfilled</i>	<i>All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered</i>
Project (preparation, presentation, defense)	<6 grades	6-7 grades	7-8 grades	9-10 grades
	<i>Task requirements not met</i>	<i>Completed in the amount of up to 5 working slides on educational materials, individual components (names of elements, conclusions) absent</i>	<i>All the requirements for the task are met, but there are no own conclusions</i>	<i>All requirements of the task are met, creativity is shown, own conclusions and offers are resulted</i>
Multiple choice test	<6 grades	6-7 grades	8 grades	9-10 grades
	Less 0 % correct answers	60 % - 74 % correct answers	75 % - 89 % correct answers	90-100 % correct answers
Exam. Multiple choice test	<19 grades	19-23 grades	24-27 grades	28-30 grades
	<i>Task requirements not met</i>	<i>60 % - 74 % correct answers, theoretical questions missing or</i>	<i>75 % - 89 % correct answers</i>	<i>90-100 % correct answers All the</i>

		<i>insufficiently disclosed</i>	<i>All requirements of the task are fulfilled</i>	<i>requirements of the task are fulfilled, the own solution of the problem is offered</i>
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5.2. Formative Assessment

To assess the current progress in training and understanding the areas for further improvement is provided

№	Formative Assessment elements	Date
1	<i>Testing in Google Forms</i>	<i>Every practicals (introductory control)</i>
2	<i>Oral feedback from the tutor and students on the implementation of individual calculation and analytical tasks</i>	<i>During the 3d week</i>
3	<i>Oral feedback from the tutor and students on the implementation of the individual task on current trends in business planning and examination of innovative projects</i>	<i>During the 9th week</i>
4	<i>Oral feedback from the tutor and students on the individual task</i>	<i>During the 11th week</i>
5	<i>Oral feedback from the tutor and students on the project implementation (preparation, presentation, defense)</i>	<i>During the 14th week</i>

LEARNING RESOURCES

2.1. Key resources

2.1.1. Textbooks, manuals

1. Ільчук П. Г. Бізнес-планування та управління проектами: Навчальний посібник. Львів, 2018. 215 с.
2. Кожушко Л.Ф., Кропивко С.М. Управління проектами: Навчальний посібник. К.: Кондор-Видавництво, 2015. 388 с.
3. Тесля Ю. М., Єгорченкова Н. Ю., Латишева Т. В. Інтеграція методів управління окремими проектами з методом матричного управління портфелями типових проєктів. Управління розвитком складних систем : зб. наук. пр. Київ : КНУБА, 2016. № 25. С. 66–72
4. Бутко М. П, Мурашко М. І., Олійченко І. М. та ін. Проектний менеджмент: регіональний зріз. Навчальний посібник. К.: Центр учбової літератури, 2016. 416 с.
5. Петренко П. О. Управління проектами. Навчальний посібник. К.: «Центр учбової літератури», 2015. 244 с.
6. Тарасюк Г.М. Управління проектами. Навчальний посібник. К.: Каравела, 2019. 320 с.
7. Прикладні аспекти управління проектами в публічній сфері / за заг. ред. О.В. Кулініча. Х.: ФОП Іванченко І.С., 2018. 93 с.
8. Довгань Л.Є. Стратегічне управління. 2-ге видання. Навчальний посібник. 2019. 440с.
9. Управління проектами: навч. посіб. / Ю. І. Буріменко, Л. В. Галан, І. Ю. Лебедева, А. Ю. Щуровська; за ред. Ю. І. Буріменко. Одеса: ОНАЗ ім. О. С. Попова, 2017. 208 с.

Other sources

Legislation

10. Закон України “Про науково-технічну інформацію” (від 25.06.93. No 3323- XII) чинний, поточна редакція від 20.10.2019, підстава - 155-IX. URL: <https://zakon.rada.gov.ua/laws/show/1560-12#Text>.
11. Закон України “Про пріоритетні напрями розвитку науки і техніки” (від 11.07.2002 No2623-III) чинний, поточна редакція від 20.10.2019, підстава - 155-IX. URL: <https://zakon.rada.gov.ua/laws/show/1560-12#Text>.
12. Постанова Верховної Ради України “Про концепцію науково-технічного та інноваційного розвитку України” (від 13.07.99 No916-XIV) чинний, поточна редакція від 20.10.2019, підстава - 155-IX. URL: <https://zakon.rada.gov.ua/laws/show/1560-12#Text>.
13. Наука в університетах [Електронний ресурс]. – Режим доступу: <https://mon.gov.ua/ua/nauka/nauka/nauka-v-universitetah>.
14. Академічна мобільність [Електронний ресурс]. – Режим доступу: <https://mon.gov.ua/ua/osvita/visha-osvita/osvita-za-kordonom/akademichnamobilnist>
15. Гранти [Електронний ресурс]. – Режим доступу: <http://zrda.org/grants/>.

Additional resources

16. A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Sixth Edition // USA. PMI, 2017. 756 p.
17. OGC (Office of Government Commerce). Managing Successful Projects with PRINCE2 (2017) TSO (The Stationery Office), Printed in the United Kingdom for The Stationery Office, 2017. 425 p

18. Project Manager Competency Development Framework (PMCDF v. 3) // USA. PMI, 2017. – 191 p

19. Projects IN Controlled Environments (PRINCE2) the Office of Government Commerce (OGC), United Kingdom. URL: <https://discovery.nationalarchives.gov.uk/details/r/C11669509>

20. Mykhailov A., Makarova V., Kapinos N., Petrova N., Land management's development in the period of land relations reform in Ukraine. *Estudios de Economía Aplicada*. Vol 38, No 4 (2020) 1-9 URL: <http://ojs.ual.es/ojs/index.php/eea/article/view/3963>

DOI: <http://dx.doi.org/10.25115/eea.v38i4.3963> (Scopus, Web of Science)

21. Mykhailov A., Conceptual Approaches to Managing Sustainable Rural Development in the Conditions of Administrative-Territorial Reform. / Mykhailova, L., Mykhailov, A., Kalachevska, L., Stoyanets, N., Kharchenko, T., Tkachenko, V., ... Slavkova, O. (2020). Sustainable Development of Rural Areas: Institutional Support and Challenges of Reform. (L.I. Mykhailova, Ed.). Warsaw: RS Global Sp. z O.O. p.137, PP.14-25 ISBN 978-83-955313-9-2

22. Lyubov Mikhailova, Natalia Stoyanets, Andrii Mykhailov, Tetiana Kharchenko, Hrabrin Bachev, Sustainable development of the agrarian sector of the economy of Ukraine: perspectives and Challenges. *Problems and Perspectives in Management*, Volume 16, Issue 3, 2018 [https://doi.org/10.21511/ppm.16\(3\).2018.03](https://doi.org/10.21511/ppm.16(3).2018.03) (SCOPUS)

International specialized search systems

<http://info.studyweb.com> – specialized system for searching resources for education <http://infomine.ucr.edu> - virtual library of electronic publications http://searchenginewatch.com/links/Specialty_Search_Engines – directory of specialized search engines.

<http://www.sciseek.com> – search for scientific information, Ukrainian specialized search engines.

<http://meta-ukraine.com/> Mera – it is a Ukrainian search engine with a wide search system for various topics, including a selection of electronic dictionaries.

English search systems

<http://www.yahoo.com/> – English search engine has the most developed structure of directories and various services. Hundreds of thousands of different Internet resources are organized manually by 14 main headings, each of which has several subheadings with a narrower topic.

<http://www.lycos.com/> – Lycos has a huge database with URLs above 66 million. This search engine (English) contains a variety of interesting information, including news, site reviews, links to popular sites, city maps, and tools for finding the addresses of various people and search for web images and sound clips.

Academic Program (Syllabus) Review Science project management

Developed by the head of Management Department Mykhailov A. M.

Parameter by which the educational program (syllabus) of the educational component is assessed by the guarantor or a member of the project team	Yes	No	Comment
Learning outcomes according the educational component (MLOs) correspond to the NQF	+		
Learning outcomes according the educational component (MLOs) correspond to the stipulated PLOs (for compulsory EC)	+		
The results of training in the educational component provide an opportunity to measure and assess the level of their achievement	+		

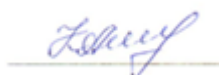
Member of the project group Ecology Academic Program



V.G. Skliar

Parameter by which the educational program (syllabus) of the educational component is assessed by the teacher of the relevant department	Yes	No	Comment
General information about the educational component is sufficient	+		
Learning outcomes for the educational component (MLOs) correspond to the NQF The list of training resources contains the necessary software products to achieve DRN	+		
Learning outcomes for the educational component (MLOs) provide an opportunity to measure and assess the level of their achievement	+		
Learning outcomes (MLOs) relate to the students competencies, not the content of the discipline (contain knowledge, skills, abilities, not topics of the curriculum of the discipline)	+		
The content of the EC is formed in accordance with the structural and logical scheme	+		
Learning activity (teaching and learning methods) allows students to achieve expected learning outcomes (MLOs)	+		
The educational component involves learning through research that is appropriate and sufficient for the corresponding level of higher education	+		
The assessment strategy within the educational component is in line with the policy of the University / faculty	+		
The provided assessment methods allow to assess the degree of achievement of learning outcomes in the educational component	+		
The workload of students is adequate to the volume of the educational component	+		
Recommended learning resources are sufficient to achieve learning outcomes (MLOs)	+		
The literature is relevant	+		
The list of training resources contains the necessary software products to achieve MLOs	+		

Reviewer



G.O. Klymenko