

Ministry of education and science of Ukraine
Sumy national agrarian university
Faculty of economics and management
Department of management named by professor L.Mykhailova

Syllabus of the educational component

SYSTEM TECHNOLOGIES IN MANAGEMENT (selective)

Specialty	073 Management
Educational program	Management
HE level	doctor of philosophy the third (educational and scientific) level of higher education

Creator:

Sokhan I. Sokhan I., Dr.Sci in Management, Professor of Management Department
named after professor L.Mykhailova

Module syllabus agreed at the Department of Management named by Professor L.I. Mykhailova meeting	Protocol № 15 dated 10.06.2025
	Head of Management Department named by Professor L.I. Mykhailova <u>A. Oriekhova</u> (A. Oriekhova)

Approved by:

Guarantor of the Academic program

Inna SOKHAN

Dean of the Faculty

Svitlana LUKASH

Head of the Department of Postgraduate and Doctoral Studies,
where the educational program is implemented

Svetlana YAROSHCHUK

Syllabus review (attached) is provided by :

Representative of the Department of Education Quality assurance,
licensing and accreditation

Svitlana Koshchak

Registered in electronic data base

2025

@SNAU, 2025

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

1.	Name of EC	System technologies in management			
2.	Faculty/Department	Faculty of Economic and Management / Department of Management named by professor L.Mykhailova			
3.	State of EC	Selective			
4.	Program/Specialty	Scientific and educational program «Management». The third (educational and scientific) level of higher education. Level of higher education: doctor of philosophy. Field of study: 07 - «Management and administration». Specialty: 073 - «Management».			
5.	Level of NFC	8			
6.	Semester and studying duration	Full-time 3 semester			
7.	ECTS credits number	3			
8.	Total workload and time allotment Language of instruction	Directed study			Self-directed study
		Lectures	Seminars	Labs	
		20	30	-	100
9.	Lecturer/Leader of educational component	English			
10.	ECTS credits number	Inna Sokhan, Dr.Sci in Management, professor of Management department named by provessor L.Mykhailova			
11.	Contacts	Consultations hours – every tuesday at 12.15, online; innalozynska@gmail.com			
12.	Educational component description	The discipline "system technologies in management" is an important component of the training of specialists and occupies a significant place in future practical activities. The importance of the course is determined by the formation of modern systemic and risk-oriented thinking in students, their acquisition of a complex of fundamental knowledge in the field of organization management, mastering of practical skills of professional activity using the latest management tools to achieve set goals in changing conditions. The discipline is aimed at obtaining professional competences regarding the ability to systematically manage organizational changes, build modern models and management systems, master the latest technologies for exercising managerial influence and making managerial decisions in conditions of uncertainty and risk, ensuring effective and efficient development of the organization.			
13.	Educational component aim	Formation of managers of a new type, capable of creatively creating, analyzing and solving complex problems in conditions of competition, ensuring sustainable development of enterprises based on a systematic approach to business			
14.	Prerequisites for educational component studying, connection with other educational components of EP	1. The educational component is based on such a course as: agricultural management 2. The educational component is the basis for preparing a dissertation			

15.	Policy of academic integrity	According to the Code of Academic Integrity of the Sumy NAU, academic integrity is a set of principles, rules of behavior of participants in the educational process, aimed at forming an independent and responsible personality, capable of solving tasks in accordance with the educational level in compliance with the norms of law and social morality. Observance of academic integrity by students of higher education involves independent performance of educational tasks, tasks of current and final control, learning results. It is expected that students of higher education will adhere to the principles of academic integrity, being aware of the consequences of its violation, which is determined by the regulatory documents of the Sumy National Agrarian University, in particular the Code of Academic Integrity, the Regulations on the Prevention and Detection of Academic Plagiarism at the Sumy NAU (a full list of regulatory documents is posted on the university's website. https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/). For violation of academic integrity, students of higher education may be held to the following academic responsibility: - repeated assessment (test, exam, credit, etc.); - repeated completion of the training course; - warning; - issuing a reprimand; - expulsion from the university; (Part 5 of Article 48 of the draft Law of Ukraine "On Education"); - arrest or restriction of liberty, or deprivation of liberty, with deprivation of the right to hold certain positions or engage in certain activities with a fine.
17.	Keywords:	Management, technology, modeling, systems, resources, system concepts.
18.	Link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=5622

2. LEARNING OUTCOMES UNDER THE EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH PROGRAM LEARNING OUTCOMES

Learning outcomes for EC (MLOs): On successful completion the educational component, the student will be able...	Program learning outcomes, PLOs (specify the number according to the numbering given in EP) ¹			How assessed
	PLO ₆	PLO ₇	PLO ₁₀	
MLOs 1. Understand the essence and principles of the system approach in management; the role and relationship of the constituent components of the system of relations in the organization, formulate the problem and evaluate the results.	x			Individual calculation and analytical task
MLOs 2. To study the structural elements of the management system, to use the latest technologies and research methodology in combination with modern management science, to know the approaches to the formation of the management system.		x		

MLOs 3. Apply the latest management theories and concepts, create a resource concept of system management in accordance with the research objectives, formalize the results of scientific research.			x	Multiple choice test
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PRN 06. Plan and carry out scientific and applied research in management and related interdisciplinary areas using modern tools, critically analyze the results of one's own research and the results of other researchers in the context of the entire complex of modern knowledge on the problem under study; make proposals for funding research and/or projects.

PRN07. Carry out testing and implementation of the results of one's own research in the field of management.

PRN10. Develop theories, concepts and principles of management to implement the principles of sustainable development at different levels of management, integrate the obtained research results into logical structures to solve theoretical and practical management problems in accordance with the topic of one's own research.

3. CONTENT OF THE EDUCATIONAL COMPONENT (CURRICULUM PROGRAM)

Topic. List of issues to be considered within the topic	Distribution within the general time budget			References
	Lc	Pr	Ind	
Topic 1. The essence, role and methodological foundations of management as a system. Plan 1. Management as a specific sphere of human activity. 2. The system of relations in the organization as a subject of management study. 3. Signs and principles of the system approach.	2	2	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 12
Topic 2. The essence of the system approach in management 1. Definition of the concept of system. 2. Components, elements and connections in the system. 3. Classification, structure and properties of the management system.	2	2	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12
Topic 3. Enterprise as an open economic system 1. System presentation of the organization. 2. Structuring of the macro environment of the enterprise, its components. 3. The structure of the internal environment of the enterprise. 4. System characteristics and characteristics of the enterprise.	4	4	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 13
Topic 4. System, process and situational management 1. Modern approaches to enterprise management and their features: system management, process management, situational management. 2. Advantages of the system approach in enterprise management.	2	4	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13

Topic 5. System concepts of management Plan 1. Concept of thinking as a system. 2. Systemic thinking. Properties of systemic thinking. 3. Advantages of using systems thinking. 4. System management theory 7S.	2	2	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 14, 18, 19
Topic 6. Methodology of applied systems analysis of socio-economic systems Plan 1. 1. Methodology for determining the goal of the system. Properties of the methodology for the goal of the system. 2. 2. The concept of the problem. Ways of systemic problem solving. 3. 3. Ways of influencing the subject. Four types of intervention in reality.	2	2	15	1, 2, 3, 4, 5, 6, 8, 9, 10, 13, 15
Topic 7. Resource concept in management 1. Resources as a systemic criterion for the development of economic systems. 2. Modern resource concept in management. 3. Management of resource potential as a factor in the success of the organization's functioning	2	4	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 11
Topic 8. Modeling of systems in enterprise management 1. Learning and transforming the world through models. 2. Data Analytics as a method of making management decisions	4	6	15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Topic 9. A systematic approach to team management 1. Team management as a system and as a process. Tasks of the personnel management system. 2. Systemic methods of team management. Management style of the manager and his functions. 3. Determination of the prospects of the team. 4. Formation of the team management system. Factors affecting the formation of the company's personnel management system.	2	4	10	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 22, 23
Total	20	30	100	

4. TEACHING AND LEARNING METHODS

MLO	Teaching methods (work to be carried out by the teacher <u>during classroom classes</u> , consultations)	Teaching methods (what types of educational activities should the student <u>perform independently</u>)
MLOs 1. Understand the essence and principles of the system approach in management; the role and relationship of the constituent components of the system of relations in the organization, formulate the problem and evaluate the results.	Verbal methods: lecture, explanation, educational discussion Visual methods: demonstration Practical methods: practical works, individual calculation and analytical tasks Method of tutoring	Method of ready knowledge
MLOs 2. To study the structural elements of the management system, to use the latest technologies and research methodology in combination with modern management science, to know the approaches to the formation of the management system.		Method of formation of abilities and skills
MLOs 3. Apply the latest management theories and concepts, create a resource concept of system management in accordance with the research objectives, formalize the results of scientific research.		Methods of checking and evaluating knowledge, abilities and skills
		Research method

5. EVALUATION BY THE EDUCATIONAL COMPONENT

5.1.1 To assess the expected learning outcomes, it is provided:

№	Methods of summative assessment	Points / Weight in the overall assessment	The date of compilation
1.	Performing analytical and research tasks	2x15 =30 points / 30%	During the semester
2.	Individual tas	10 points / 10 %	According to the approved schedule
3.	Multiple choice test	15 points/ 15%	According to the approved schedule
4.	Exam – (written answer on the exam ticket)	According to the approved schedule	According to the approved schedule

5.1.2 Evaluation criteria

Component	Unsatisfactory	Satisfactory	Good	Excellent
Performing analytical and research tasks	<6 points	7-10 points	11-13 points	14-15 points
	The task requirements have not been fulfilled	Most of the requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	All requirements of the task have been fulfilled	All the requirements of the task were met, creativity and thoughtfulness were demonstrated, and an own solution to the problem was proposed
Individual task	<3 points	4-5 points	6-8 points	9-10 points
	The task requirements have not been fulfilled	Most of the requirements are met, but some components are missing or insufficiently disclosed	All requirements of the task have been fulfilled	All the requirements of the task were met, creativity and thoughtfulness were demonstrated, and an own solution to the problem was proposed
Multiple choice test	<6 points	7-10 points	11-13 points	14-15 points
	<6 correct answers	7-10 correct answers	11-13 correct answers	14-15 correct answers
Exam – (written answer on the exam ticket)	<19 points	19-23 points	24-29 points	30 points
	Incomplete answer to 2 theoretical questions.	Most of the requirements are met, but some components are not sufficiently disclosed. The practical task is partially solved.	The content of 2 theoretical questions is disclosed, the practical task is solved, but there are some comments.	2 theoretical questions are disclosed, the practical task is solved, and the actual solution to the problem is proposed.

5.2. Formative assessment:

5.2.1 To evaluate the current progress in education and understand the areas of further improvement, is provided

№	Elements of formative assessment	Date
1	Oral feedback from the teacher on the performance of analytical and research tasks	After each practical session
2	Oral feedback from the teacher with instructions on the individual task.	For 6 weeks
3	Self-assessment of the multiple-choice test.	After testing

.3 Total number of points for EC and rating scale

The total number of points for the educational component is 100 points.

5.3.1 Evaluation scale operating at the University:

The sum of points for all types of educational activities	Evaluation on a national scale	
	For an exam, course project (work), practice, qualification work	For a credit
90 – 100	excellent	passed
82-89	good	
75-81		
69-74		
60-68	satisfactory	
35-59	not satisfactory with the possibility of retaking	not passed with the possibility of retaking
0-34	not satisfactory with obligatory repeated study of the discipline	not passed with obligatory repeated study of the discipline

6. LEARNING RESOURCES (LITERATURE)

6.1. Main sources

1. Lomer D. What is Case Management Software? 5 Elements of Effective Case Tracking and Reporting May 4th, 2020. URL: <https://www.i-sight.com/resources/what-is-case-management-software/>
2. Šimović V., Varga M., Oreški P. Case Study: an Information System Management Model. Management Information Systems, Vol. 7 (2022), No. 1, pp.13-24. URL: <https://www.ef.uns.ac.rs/mis/archive-pdf/2012%20-%20No1/MIS2012-1-2.pdf>
3. Shilling, M. (2020). *Strategic management of technological innovation* (6th ed.). McGraw-Hill Education. <https://doi.org/10.1037/0000168-000>
4. Doyle, P., & Stern, P.M. (2006). *Marketing management and strategy* (4th ed.). Financial Times Prentice Hall. Retrieved 5 March, 2021, from <https://ebookcentral.proquest.com/lib/dublinit/detail.action?docID=5136422>
5. Association for Project Management (2020). What Is Project Management? <https://www.apm.org.uk/resources/what-is-project-management/#:~:text=Project%20management%20is%20the%20application,a%20finite%20timescale%20and%20budget>

6.2 Methodological support

1. **System technologies in Management:** Lecture Courses for Candidates for the Degree of Doctor of Philosophy in the Specialty D3 (073) Management at the Third (Educational and Scientific) Level of Higher Education of Full-Time and Part-Time Forms of Study / ed.: I.V. Sokhan. Sumy, 2025. 122 p.
2. **System technologies in Management:** Methodical recommendations regarding practical and seminar classes for applicants of the Degree of Doctor of Philosophy in the Specialty D3 (073) Management at the third (Educational and Scientific) Level of Higher Education of Full-Time and Part-Time Forms of Study / ed.: I.V. Sokhan. Sumy, 2025. 71 p.
3. **System technologies in Management:** Methodical recommendations regarding independent work applicants of the Degree of Doctor of Philosophy in the Specialty D3 (073) Management at the third

(Educational and Scientific) Level of Higher Education of Full-Time and Part-Time Forms of Study / ed.: I.V. Sokhan. Sumy, 2025. 65 p.

6.3.Additional resources

11. Berezovetska, I.; Botsula, O.; Zolotarova, O.; Sokhan, I.; Popovskyi, V. (2024) ANALYSIS OF ENVIRONMENTALLY SUSTAINABLE PROJECTS IN THE FIELD OF GREEN ARCHITECTURE: USE OF NATURAL MATERIALS AND RENEWABLE ENERGY SOURCES, Journal of Interdisciplinary research, Available at: <https://www.webofscience.com/wos/woscc/fullrecord/WOS:001156490800014>
12. Herman L., Fedirko O., Kostyk Y., Shkoda M., Sokhan I. (2024) ASSESSMENT OF THE IMPACT OF GLOBALIZATION ON THE REGIONAL DEVELOPMENT OF INNOVATION CLUSTER, Journal of Interdisciplinary research, Available at: <https://www.webofscience.com/wos/woscc/fullrecord/WOS:001156490800027>
13. Wren, D. A., & Bedeian, A. G. (2019). The evolution of management thought. (6th ed.), New York: Wiley, 518 p.
14. Mary P. Follett (2023). Creating Democracy, Transforming Management. New Haven: Yale University Press, 200 p.
15. Mearian, Lucas, "What is blockchain? The most disruptive technology in decades", Computerworld, May 31, 2018. <https://www.computerworld.com/article/3191077/security/what-is-blockchain-the-most-disruptive-tech-in-decades.html>; <https://www.forbes.com/sites/theyec/2018/01/10/23-trends-that-will-shake-the-business-world-in-2018/#6b6c3524583f>
16. This is a broad definition which has been used in different forms. The source here is "What is an External Environment in Business" Chapter 5, study.com, Accessed October 15, 2018. <https://study.com/academy/lesson/what-is-an-external-environment-in-business-definition-types-factors.html>
17. Eisenhardt, K. M., & Sull, D. N. (2021). "Strategy as simple rules", Harvard Business Review, 79(1): 106-119

6.3.Software

1. Use of standard Microsoft packages: Word, Excel, PowerPoint.
2. Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens).
3. Zoom Video Communications, Inc. v. 5.6.1 software - for organizing training via video communication (if necessary).
4. Moodle distance learning system software - for organizing distance learning for higher education students (access to teaching materials, communication with the teacher, various types of assessment).
5. Web 2.0 software: Google Cloud & Docs - for providing teaching materials, communication with higher education students, completing and posting assignments.
6. Platforms of massive open online courses (Prometheus, Coursera, Diia. Digital Education, etc.) - as a tool for non-formal education to study elements of the educational component, which allows to deepen knowledge on topics and develop additional digital competencies.
7. Teaching materials for the course in the MOODLE distance learning system <https://cdn.snau.edu.ua/moodle/course/view.php?id=5622>