

Annotation to the Working Program of the Discipline

B1.V.04 System Analysis and Decision Making

Total labor intensity: 2 credit units.

Purpose of mastering the discipline: to obtain theoretical and practical knowledge in the field of system analysis and decision making, to understand the essence of system analysis as a methodology for studying complex objects and processes, as well as to become familiar with instrumental and technical means of decision making.

Objectives of mastering the discipline: consist of mastering professional knowledge and obtaining professional skills in the field of system analysis:

- to provide a modern methodological and theoretical foundation for the practical activities of master's students in the field of innovation;
- to reveal the nature and essence of the system approach to organizing scientific research;
- to discuss conceptual and methodological issues of the theory and practice of system research and decision making;
- to examine examples of applying system research methods and decision theory in organizational management;
- to form in future specialists the conviction of the necessity to participate in research activities.

Place of the discipline in the structure of the educational program

The discipline "System Analysis and Decision Making" belongs to the part formed by the participants of educational relations of block 1 "Disciplines (Modules)" of the curriculum 38.04.01 "Economics", master's program "Financial Economics".

This discipline is logically and methodologically interconnected with other parts of the educational program, ensuring continuity and harmonization of course mastery.

Prerequisite courses: "Modern Information Technologies in Economics", "Economic Analysis (advanced level)", and others. Disciplines that use the material of this discipline: "Strategic Management and Marketing", "Methods of Organizational and Managerial Decision Making", "Company Value Assessment and Management", and others.

The discipline "System Analysis and Decision Making" allows for the effective formation of general cultural and professional competencies, contributes to the comprehensive development of the master's students personality and guarantees the quality of their training.

It is assumed that upon completion of the course, master's students will be able to read contemporary economic literature, write essays and research papers on topics relevant to the course.

Requirements to the level of mastering the discipline. The study of this academic discipline is aimed at developing the following competencies in students:

UC-1 – Capable of carrying out critical analysis of problem situations based on a system approach, developing a strategy of action.

IUC-1.1 – Identifies a problem situation, on the basis of a system approach carries out its multi-factor analysis and diagnosis.

- Knows: the principles of the system approach.
- Is able to: design management systems, identify deviations and analyze the causes of actual or potential deviations in the operation of a process management system.
- Possesses: methods of identifying deviations in the operation of a process management system, methodologies for identifying the causes of deviations in the operation of a process management system.

PC-4 – Capable of managing an investment project.

IPC-4.1 – Demonstrates the ability to manage the effectiveness of an investment project.

- Knows: the principles of system analysis and decision theory in the implementation of an investment project.
- Is able to: decompose an investment project into standard stages with clearly established results; describe the detailed distribution of roles and powers among the participants of the investment project and the corresponding interconnections.
- Possesses: methods of system analysis that allow determining the sequence of operations for the implementation of an investment project.

IPC-4.3 – Applies risk management tools for an investment project.

- Knows: system analysis and decision theory within the framework of investment project implementation.
- Is able to: collect, analyze, systematize information and data, document complete and exhaustive requirements for projects and processes of the organization and their resource environment.
- Possesses: methods of system analysis that allow identifying and documenting investment project risks; assessing and ranking identified risks by probability and degree of impact on the result of the investment project.

IPC-4.4 – Demonstrates the ability to manage deadlines and control the implementation of an investment project.

- Knows: the principles of system analysis and decision theory within the framework of investment project implementation.
- Is able to: draw up work plans for the investment project; develop documents and reports on the investment project; collect, analyze, systematize information and data, document complete and exhaustive requirements for projects and processes of the organization and their resource environment.
- Possesses: methods of schedule planning and schedule management of an investment project; control of current interim results of the investment project; development of a working schedule for monitoring the execution of contractual

obligations under the investment project; assessment of the compliance of interim results of the investment project with contractual obligations; identification of deviations from the schedule for the execution of contractual obligations under the investment project and analysis of their causes.

Main sections of the discipline

Sections (topics) of the discipline studied in the 1st year of the master's program (full-time form)

- Section 1. Systems and patterns of their functioning and development. – Total 14 hours (lectures 2, laboratory 2, independent 10)
- Section 2. Fundamentals of system analysis. – Total 14 hours (lectures 2, laboratory 2, independent 10)
- Section 3. Methodology of system analysis. – Total 14 hours (lectures 0, laboratory 4, independent 10)
- Section 4. Modern technologies of system analysis. – Total 14 hours (lectures 0, laboratory 4, independent 10)
- Section 5. Business Intelligence systems. – Total 15.8 hours (lectures 2, laboratory 6, independent 7.8)
- Intermediate assessment (ICI): 0.2 hours
- Total labor intensity for the discipline: 72 hours (lectures 6, laboratory 18, independent 47.8)

Sections (topics) of the discipline studied in the 1st year of the master's program (part-time form)

- Section 1. Systems and patterns of their functioning and development. – Total 12 hours (lectures 2, laboratory 0, independent 10)
- Section 2. Fundamentals of system analysis. – Total 12 hours (lectures 0, laboratory 2, independent 10)
- Section 3. Methodology of system analysis. – Total 12 hours (lectures 0, laboratory 2, independent 10)
- Section 4. Modern technologies of system analysis. – Total 12 hours (lectures 2, laboratory 2, independent 16)
- Section 5. Business Intelligence systems. – Total 20 hours (lectures 2, laboratory 2, independent 16)
- Intermediate assessment (ICI): 0.2 hours
- Control: 3.8 hours
- Total labor intensity for the discipline: 72 hours (lectures 4, laboratory 8, independent 56)

Course papers: not provided.

Form of intermediate assessment: credit test

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