Federal State Autonomous Educational establishment of higher education
RUDN-University

Engineering Academy

Recommended by ICSS

PROGRAMME STRUCTURE AND SYLLABUS

Name of the course: Actual Problems of the Theory of Management of Social Economic Systems

Recommended for the program track: 09.06.01 Informatics and computer engineering

Educational program specialization: Management in social and economic systems (engineering science): strategic management

1. Course objectives and learning outcomes:

Aim to form professional competencies and in-depth theoretical knowledge in the field of economic and mathematical modeling of management processes in social and economic systems using modern computer technologies

Learning outcomes: performing tasks to study-skills of finding and understanding new, as well as rethinking modern methods of the theory of management of social and economic systems.

2. Place of the course in the structure of GEP (General Education Programme)

The discipline belongs to the variable part of Block 1 of the curriculum. Table 1 shows the previ-ous and subsequent components of the educational program aimed at the formation of competencies in accordance with the competence matrix of Education Programme of High Education Competence-based education.

Table No. 1

Preceding and subsequent courses, directed to the competences forming

№ п/п	Competence and its code	Preceding courses	Following courses
Professional competences			
1	PC-3	Research seminar Management in social and economic systems Methodology of scientific research Practice on obtaining professional skills and experience of professional activity (research practice)	Scientific research (preparation of a scientific qualification work (dissertation) for the degree of Candidate of Sciences (Ph.D.)

3. Requirements to the outcome of the course:

- The learning outcomes of the course are special knowledge, abilities, relevant skills and experience, which will ensure the achievement of the planned results of mastering the educational program and will characterize the stages of the formation of the following competence:

- - be ready for independent (including leading) research activities that require broad fundamental training in modern areas of industry science, deep specialized knowledge and research in the chosen are-as, and possession of the skills of modern research methods (PC-3).

4. Workload of the course and forms of study work

General workload of the course is 3 credit units (108 academic hours).

academic hours

Form of study work	Total hours								
	Semester								Total
	1	2	3	4	5	6	7	8	
Class hours (total)	-	-	-	40	-	-	-	-	40
Including:									
Lectures	-	-	-	20	-	-	-	-	20
Practical classes (PC)	-	-	-	20	-	-	-	-	20
Self-study	-	-	-	68	-	-	-	-	68
Assessment	-	-	-	-	-	-	-	-	-
Total hours:	-	-	-	108	-	-	-	-	108
credits:	-	-	-	3	-	-	-	-	3

5. Content of the course

5.1. Course Units

№ п/п	Name of the course part	Subject matter of the part
1	The main provisions of the theory of management	Topic 1. Managerial relations and the concept of organizational management. The concept of management functions and their classification, general and specific functions, strategic planning in organizational management systems, tactical and operational planning, operational management.

		Topic 2. Management objectives. Goal tree. Specifics of working with target information. Criteria of effectiveness and limitations in achieving the goal. Control in complex systems. The concept of feedback and its role in management. Formalization and formulation of management tasks.
		Topic 3. The main types of organizational structures (linear, functional, combined, matrix), their evolution and development. Features of the formation of program-target management structures at various levels of the hierarchy. The concept of management efficiency. Methods of evaluation of activities and effectiveness of management. Control in complex systems, feedback and its role in management, entropy and information as characteristics of diversity and management, the principle of necessary diversity.
2	Basic provisions of management of social and economic systems	Topic 1. The main structures and methods of management of socio-economic systems: administrative-organizational, economic, socio-psychological, etc. Specifics of management of social and economic systems. The role of man in the management of social and economic systems.
		Topic 2. A systematic approach to solving social and economic problems of management. The basic concepts of the system approach: system, element, structure, environment. Properties of the system: integrity and articulation, connectivity, structure, organization and self-organization, integrated qualities. Organization as a system.
		Topic 3. Tasks of analysis and synthesis of mechanisms of functioning and management of socio-economic systems. Computer engineering and software tools in the management of socio-economic systems. Boundaries and possibilities of formalization of procedures of management of social and economic systems.
3	The role of information in the management of social and economic models	Topic 1. Organization and information interaction, models and methods of decision-making, decision-making in conditions of risk and uncertainty, the use of expert assessments in decision-making, consulting activities in decision-making.
		Topic 2. The concept of information, its properties and characteristics, features of the use of information about the state of the external environment and the object of management in organizational management systems with feedback; features of creation and use of information support of organizational management systems, information support in emergency situations.
		Topic 3. Methods of obtaining and processing information for management tasks, expert procedures and forecasting procedures. Preparation and adoption of management decisions. Automated systems of support of management decision-making. Information languages and classifiers, software of organizational systems
4	Mathematical Modeling in the Management of Social and Economic Systems	Topic 1. Mathematical and simulation modeling. Modeling method and its use in the study and design of control systems. The concept of models, the classification of models.
		Topic 2. Economic and mathematical methods and models. Production functions. Models of Leontiev, Arrow-Derbe, Neumann-Gale, etc. Principles, models, methods and means of designing and developing organizational systems.

5.2. Course Units and Academic Activities

academic hours

№ п/п	Subject matter of the part	Lectures	Seminars	Self-study	Total workload, hours
1	The main provisions of the theory of management	6	6	19	30
2	Basic provisions of management of social and economic systems	6	6	19	30
3	The role of information in the management of social and economic models	6	6	19	30
4	Basic provisions of management of social and economic systems	2	2	11	18
	Итого:	20	20	68	108

6. Seminars/practical classes

№ п/п	Course unit	Topics and issues for discussion	Total workload, hours
1	1	Management relations. Management functions. Management objectives. Goal tree. Criteria of effectiveness and limitations in achieving the goal. Control in complex systems. Feedback in management. Formalization and formulation of management tasks. The main types of organizational structures. Formation of program-target management structures. Methods of evaluation of activities and effectiveness of management.	6
2	2	Basic structures and methods of management of socio-economic systems. The role of man in the management of social and economic systems. A systematic approach to solving social and economic problems of management. Tasks of analysis and synthesis of mechanisms of functioning and management of socio-economic systems. Computer engineering and software tools in the management of socio-economic systems.	6
3	3	Models and methods of decision-making, decision-making in conditions of risk and uncertainty, the use of expert assessments in decision-making, consulting activities in decision-making. Use of information about the state of the external environment and the object of management in organizational management systems with feedback. Methods of obtaining and processing information for management tasks, expert procedures and forecasting procedures. Automated systems of support of management decision-making. Information languages and classifiers, software of organizational systems	6
4	4	Methods of mathematical and simulation modeling used in the study and design of control systems. Economic and mathematical methods and models. Models of Leontiev, Arrow-Derbe, Neumann-Gale, etc.	2

7. Technical Support Requirements

Classrooms with technical support	Address
Classroom for lectures, seminars and midterm assessments № 493 Projector Epson EH-TW5300 (LCD, 1080p 1920 x 1080, 2200Lm, 35000:1, 2 x HDMI, MHL Screen Draper Baronet NTSC (3:4) 244/96(8) 152*203 MW Set of specialized furniture	Moscow, Ordzhonikidze str., 3
Education and methodology Calassroom for self-study № 345 Equipment and furniture:: - personal computers with access to the Internet; - desks, chairs	Moscow, Ordzhonikidze str., 3

8. Study-methodical and information sources:

Databases, reference systems and search engines:

1. Electronic library system(ELS) РУДН and third-party ELS :
   - ELS RUDN http://lib.rudn.ru/MegaPro/Web
   - ELS «University Library Online» http://www.biblioclub.ru
   - ELS Юрайт http://www.biblio-online.ru
   - ELS « Student's Consultant » www.studentlibrary.ru
   - ELS «Лань» http://e.lanbook.com/
2. Websites of ministries, departments, services, production enterprises and companies whose activities are specialized for the course:
   - http://economy.gov.ru/minec/main/- website of the Ministry of Economic Development of the Russian Federation
3. Databases and search engines:
   - electronic fund of legal and normative-technical documentation http://docs.cntd.ru/
   - Yandex search engine https://www.yandex.ru/
   - search engineGoogle https://www.google.ru/
   - abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/

9. Educational methodology resources

Basic literature:

1. Кожин В.А.Управление социально-экономической системой [Текст]: Монография / В. А. Кожин, А. П. Егоршин; Под ред. А.П.Егоршина, В.А.Кожина. - Нижний Новгород, 2009. - 288 с.
2. Алексеенко В.Б., Красавина В.А. Основы системного анализа, М.: Изд-во РУДН, 2010.- 170 с.

Supplementary literature:

1. Адизес И. Управляя изменениями. Как эффективно управлять изменениями в обществе, бизнесе и личной жизни/- М.: Манн, Иванов и Фербер, 2014 – 368 с.
2. П.Друкер. Практика менеджмента:.Пер.с англ.: Уч.пос. – М.: Издательский дом «Вильямс», 2009. – 400 с.
3. Хэл Р. Вэриан, Микроэкономика. Промежуточный Уровень: Современный Подход http://freakonomics.ru/
4. Красс М.С., Чупрынов Б.П. Математические методы и модели для магистрантов экономики Учебное пособие. 2-е изд., доп. - СПб.: Питер, 2010. - 496 с.: ил. - (Серия «Учебное пособие»). ISBN 978-5-49807-811-3.
5. Алексеенко В.Б., Иванова Т.Б. Топы: слагаемые успеха, или как достичь эффективности в управлении бизнесом. Учебное пособие.- М.: РУДН, 2010.- 456 с.
6. Доманова А.В. Маркетинг: Компьютерное моделирование / А.В. Доманова, С.В. Жак, Ф.Ф. Стреликов. - Ростов н/Д: ЛаПО, 2009.- 96-99 с.

The program was drawn up in accordance with the requirements of the OS of the RUDN.

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