

*Federal State Autonomous Educational establishment of higher education
RUDN-University*

Engineering Academy

Recommended by ICSS

PROGRAMME STRUCTURE AND SYLLABUS

Name of the course: Management in social and 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: form professional competencies and in-depth theoretical knowledge in the field of management in social and economic systems among graduate students.

Learning outcomes:

1. to get a general idea of the variety of methods and approaches used in solving problems related to management in social and economic systems;
2. to have practical skills of application of main methods in modern management systems 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 previous 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

№ II/II	Competence and its code	Preceding courses	Following courses
General professional competencies			
1	GPC-7	Research seminar Methodology of scientific research	Actual problems of the theory of management of social economic systems Modeling of social and economic systems Scientific research (preparation of a scientific qualification work (dissertation) for the degree of Candidate of Sciences (Ph.D.)
Professional competencies			
2	PC-3 PC-5	Research seminar Methodology of scientific research Practice on obtaining professional skills and experience of professional activity (research practice)	Actual problems of the theory of management of social economic systems Modeling of social and economic systems 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:

- get knowledge of methods of conducting patent research, licensing and copyright protection when creating innovative products in the field of professional activity (GPC-7);
- 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 areas, and possession of the skills of modern research methods (PC-3).
- get fundamental knowledge in the main sections of informatics and computing technology, must have the ability to conduct scientific research and obtain new scientific and applied results (PC-5).

4. Workload of the course and forms of study work

General workload of the course is 4 credit units (144 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	-	-	-	36	-	-	-	-	36
Total hours:	-	-	-	144	-	-	-	-	144

5. Content of the course**5.1. Course Units**

№ п/п	Name of the course part	Subject matter of the part
1	General issues of the theory of management of socio-economic systems	Subject of control theory. 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. The concept of management functions and their classification, general and specific functions, strategic planning in organizational management systems, tactical and operational planning, operational management, 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, psychological aspects of decision-making and implementation y, features of collective decision-making. Society as a socio-economic system. Social structure of society, social institutions, their functions and interaction. Connection of social and economic aspects of management. Principles and criteria for the formation of management structures in socio-economic systems. The main types of organizational structures, their evolution and development. Features of the formation of program-target management structures at various levels of the hierarchy.
2	Information technologies in management systems of socio-economic systems	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 the creation and use of information support for organizational management systems. The concept of management efficiency. Methods of evaluation of activities and effectiveness of management. Tasks of analysis and synthesis of mechanisms of functioning and management of socio-economic systems. 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. Computer engineering and software tools in the management of socio-economic systems.
3	Mathematical foundations, models and methods of management of socio-economic systems	Modeling method and its use in the study and design of control systems. The concept of a model, the classification of models. Boundaries and possibilities of formalization of procedures of management of social and economic systems. 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. Management in complex systems, feedback and its role in management, entropy and information as characteristics of diversity and management, the principle of necessary diversity, individual and typical design of organizational systems, algorithms of management and data processing tasks, knowledge presentation, design of data processing systems in organizational systems, information support of organizational systems, information languages and classifiers, organization software Its features, reservation of software modules and information arrays, information protection.

5.2 Course Units and Academic Activities

academic hours

№ п/п	Subject matter of the part	Lectures	Seminars	Self-study	Assessment	Total
1	General issues of the theory of management of socio-economic systems	7	7	23	12	47
2	Information technologies in management systems of socio-economic systems	7	7	23	12	48
3	Mathematical foundations, models and methods of management of socio-economic systems	6	6	22	12	49
Итого:		20	20	68	36	144

6. Seminars / practical classes

№ п/п	Name of the course part	Subject matter of the part	Total workload, hours
1	1	A systematic approach to solving social and economic problems of management. System properties. Strategic planning in organizational management systems. Tactical and operational planning. on-line control. Models and methods of decision-making. Decision-making in the face of risk and uncertainty. Use of expert assessments in decision-making. Collective decision-making. Connection of social and economic aspects of management. Principles and criteria for the formation of management structures in socio-economic systems. Formation of program-target management structures.	7
2	2	Features of the use of information on the state of the external environment and the object of management in organizational management systems with feedback, features of the creation and use of information support for organizational management systems. Methods of evaluation of activities and effectiveness of management. Tasks of analysis and synthesis of mechanisms of functioning and management of socio-economic systems. Methods of obtaining and processing information for management tasks. Automated systems of support of management decision-making. Computer engineering and software tools in the management of socio-economic systems.	7
3	3	The use of modeling in the study and design of control systems. Economic and mathematical methods and models. Models of Leontiev, Arrow-Debre, Neumann-Gale, etc. Control in complex systems. Principles, models, methods and means of designing and developing organizational systems.	6

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 Classroom 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:

- 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/>
- 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
- Databases and search engines:
 - electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
 - Yandex search engine <https://www.yandex.ru/>
 - search engine Google <https://www.google.ru/>
 - abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

9. Educational methodology resources

Basic literature:

1. Береговая, И.Б. Управление конкурентоспособностью социально-экономических систем: теория и методология: монография / И.Б. Береговая, О.М. Калиева; Министерство образования и науки Российской Федерации, Оренбургский Государственный Университет. - Оренбург: Оренбургский государственный университет, 2017. - 250 с.: табл., схем., ил. - Библиогр. в кн. - ISBN 978-5-7410-1738-8; То же [Электронный ресурс]. - URL: <http://biblioclub.ru/index.php?page=book&id=481726> (17.09.2018).
2. 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.
3. Алексеенко В.Б., Красавина В.А. Основы системного анализа, М.: Изд-во РУДН, 2010.- 170 с.

Supplementary literature:

1. Фадейчева, Г.В. Современные проблемы экономической теории и практики: сборник статей / Г.В. Фадейчева. - Москва; Берлин: Директ-Медиа, 2014. - 209 с.: ил., схем., табл. - Библиогр. в кн. - ISBN 978-5-4458-9532-9; То же [Электронный ресурс]. - URL: <http://biblioclub.ru/index.php?page=book&id=278887> (17.09.2018).
2. Адизес И. Управляя изменениями. Как эффективно управлять изменениями в обществе, бизнесе и личной жизни/- М.: Манн, Иванов и Фербер, 2014 – 368 с.
3. П.Друкер. Практика менеджмента: Пер.с англ.: Уч.пос. – М.: Издательский дом «Вильямс», 2009. – 400 с.
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. Доманова, А.В. Маркетинг: Компьютерное моделирование / А.В. Доманова, С.В. Жак, Ф.Ф. Стреликов. - Ростов н/Д: ЛаПО, 2009.- 96-99с.

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

Associate professor

E.A. Kovaleva

**Head of the educational program,
Director of the Department**

O.E. Samusenko