Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA
(RUDN University)

Higher School of Industrial Policy and Entrepreneurship
(faculty/institute/academy - the higher education program developer)

COURSE SYLLABUS

Enterprise Management Information System
(name of the discipline/module)

Recommended by the Didactic Council for the Education Field of:

38.04.02 Management
(field of studies / speciality code and title)

The study of the discipline is conducted as part of the professional program of higher education.

Engineering Management
(name (track/specialization) of professional program of higher education)

2023

1. THE GOAL OF MASTERING THE DISCIPLINE

The goal of mastering the *Enterprise Management Information System* discipline is the formation and development of future managers' theoretical knowledge and practical skills for the optimal organization of information processes, the use of information technologies and information systems in legal activities.

2. REQUIREMENTS FOR DISCIPLINE OUTCOMES

The mastering of the *Enterprise Management Information System* discipline is the formation of the following competencies (parts of competencies) in students:

Table 2.1. The list of competencies acquired by students in the course of the discipline (outcomes of the discipline)

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and develop a plan of action	GC-1.1 Analyzes the task, highlighting its basic components GC-1.2 Defines and prioritizes the information needed to solve the task GC-1.3 Searches the information to solve the task by various types of queries CC-1.4 Offers solutions to the problem, analyzes the possible consequences of their use CC-1.5 Analyzes the ways of solving problems of worldview, moral and personal nature based on the use of fundamental philosophical ideas and categories in their historical development and socio-cultural context
GC-2	Ability to manage a project at all lifecycle stages	GC-2.1 Specifies a problem, the solution of which is linked to the achievement of the project goal GC-2.2 Defines the links between the tasks set and the expected outcomes of their solution GC-2.3 Determines the available resources and limits, the valid legal norms within the framework of the tasks GC-2.4 Analyzes the project implementation schedule and chooses the best way to solve the tasks, based on the current legal norms and available resources and limitations GC-2.5 Monitors the progress of the project, adjusts the schedule in accordance with the results of the control
PC-3	Ability to manage organizations, departments, groups (teams) of employees, projects and networks	PC-3.1 Applies various organization management techniques existing in Russia and abroad PC-3.2. Uses generally accepted standards for effective interaction within the organization

3. THE DISCIPLINE IN HIGHER EDUCATION PROGRAM STRUCTURE

The *Enterprise Management Information System* is an elective block formed by students.

Within the higher education program students also take other disciplines and / or internships that contribute to the achievement of the expected learning outcomes as results of mastering the *"Enterprise Management Information System" program.*

Table 3.1. The list of the higher education program components that contribute to the achievement of the expected learning outcomes as the disciplines results.

Competence Code	Competence description	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and develop a plan of action	Economics and Management of energy and environment Engineering innovations	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
GC-2	Ability to manage a project at all lifecycle stages	Strategic management in industrial companies	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
PC-3	Capability to manage the efficiency of an investment project	Marketing and Competitiveness Management	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis

4. SCOPE OF DISCIPLINE AND TYPES OF SCHOLASTIC WORK

The total workload of the discipline is 3 credits.

Table 4.1. Types of educational work according to the periods of mastering the higher education program for FULL-TIME students

	Type of Educational Work		Total hours	Semesters 3			
1.	**Classroom classes (total)**		36	36			
	Including:		-	-			
1.1.	Lectures		18	18			
1.2.	Other activities						
	Including:						
1.2.1.	Seminars (C)		18	18			
	Practice training (PT)						
2.	**Autonomous work (total)**		63	63			
	Including:						
2.1.	Calculation and graphic works						
	Other types of autonomous work						
	Preparation and passing of midterm assessment		9	9			
3.	**Total workload (acad.hours)**		108	108			
	Total workload (credits)		3	3			

5. DISCIPLINE CONTENT

Table 5.1. The content of the discipline (module) by type of academic work

No	Name of the Discipline Section	Content of the Section (topics)	Type of Educational Work

1.	Section 1: Introduction to the methodology of designing and working with information systems.	General definitions. Set theory and logical operations in information systems. Data bases. Creating queries.	Lecture, self study
2.	Designing and creating databases**.	Creating data bases. Creation of the "Firm" database. Data selection using queries. Using forms in database. Drafting reports.	Lecture, self study
3.	Information technologies in professional activity.	Modern computer technologies in management. Office applications for effective optimization of manager's work. Calculations and special functions in Excel. Electronic document flow.	Lecture, self study

6. EQUIPMENT AND TECHNOLOGICAL SUPPORT OF THE DISCIPLINE

Table 6.1. Equipment and technological support of the discipline

Classroom Type	Equipment of the Classroom	Specialized Educational/Laboratory Equipment, Software and Materials for the Discipline (if necessary)
Lecture Hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	21 workplace: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector
Colloquium	A classroom for conducting colloquium-type classes, group and individual consultations, ongoing monitoring and midterm assessment, equipped with a set of specialized furniture and multimedia presentation equipment.	21 workplace: Celeron system unit/2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Computer Class	A computer classroom for conducting classes, group and individual consultations, continuous control and midterm assessment, equipped with personal computers (___ pcs.), a blackboard (screen) and multimedia presentation technical means.	21 workplace: Celeron system unit/2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Autonomous Work of Students	A classroom for autonomous work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIEE.	21 workplace: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector

7. INFRASTRUCTURE AND INFORMATIONAL SUPPORT NECESSARY FOR THE DISCIPLINE

a) Main Readings:

1. *Sovetov, B. Ya.* Information technologies : textbook for universities / B. Ya. Soviets, V. V. Tsekhanovsky. — 7th ed., reprint. and add. — Moscow : Yurayt Publishing House, 2023. — 327 p. — (Higher education). — ISBN 978-5-534-00048-1. — Text: electronic // EBS Yurayt [website]. — URL: https://urait.ru/bcode/449939

2. *Sovetov, B. Ya. Databases : textbook for universities / B. Ya. Soviets, V. V. Tsekhanovsky, V. D. Chertovskoy. — 3rd ed., reprint. and add. — Moscow : Yurayt Publishing House, 2021. — 420 p. — (Higher education). — ISBN 978-5-534-07217-4. — Text: electronic // EBS Yurayt [website].*

— URL: https://urait.ru/bcode/468635 (accessed: 06/20/2021).

b) Additional Readings:

1. Anikin P.V. et al. Information systems in economics. – M.: KnoRus, 2008. - 254 p.
2. Badmaev B.G. ConsultantPlus. Moscow: Higher School, 2011.
3. Vendelova M.A., Vertakova Yu.R. Information management technologies. – Moscow: Yurayt, 2011. - 462 p.
4. Melnikov P.P. Computer technologies in economics. – M.: KnoRus, 2009. - 224 p.

BiblioRossika An electronic library for students, professors and researchers. http://www.bibliorossica.com/individuals.html?ln=ru
Resources of the Internet information and telecommunication network:

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements
- RUDN Electronic Library System (RUDN ELS) http://lib.rudn.ru/MegaPro/Web
- EL "University Library Online" http://www.biblioclub.ru
- EL "Yurayt" http://www.biblio-online.ru
- EL "Student Consultant" www.studentlibrary.ru

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

The following training toolkit for the student's autonomous work is envisaged as part of mastering the discipline/module*:

1. A course of lectures on the Enterprise Management Information system discipline.
2. Laboratory workshop on the Enterprise Management Information System discipline (if laboratory work is available).
3. Methodological guidelines for drafting and formatting the course paper / project on the discipline "Enterprise Management Information System" (if there are ones).

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM FOR COMPETENCES LEVEL EVALUATION

The assessment materials and the grading system* to evaluate the graduate's level of competences (part of competences) formation as the results of the discipline Enterprise Management Information System are specified in the Appendix to course syllabus.

DEVELOPERS:

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Position, educational department	Signature	Name, surname

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<div align="right">**Annex**</div>

Methodological guidelines for students on mastering the discipline (module)

The implementation of the course provides interactive lectures, practical classes (colloquiums) using multimedia equipment, preparation of autonomous creative projects and their subsequent presentations, testing, group discussions on the subject of the course, modern knowledge control technologies.

While studying the discipline, the student must attend a course of lectures, participate in the number of colloquiums provided by the course syllabus, study autonomously some topics of the course and confirm their knowledge during control activities.

The student's work in lectures consists in clarifying the basics of the discipline, briefly taking notes of the material, and clarifying issues that cause difficulties. The lecture notes are the basic educational material along with the textbooks recommended in the main list of readings.

The teaching of the main part of the lecture material involves usage of multimedia tools that facilitate the comprehension and consolidation of the material. Presentations are available for download from the RUDN website and can be freely used by students for educational purposes.

The student must master all the topics provided for by the educational and thematic plan of the discipline. Individual topics and training issues must be mastered autonomously. The student studies the recommended literature, briefly outlines the material, and clarifies the most difficult questions that require clarification during consultations. The same should be done with sections of the course that were skipped due to various circumstances.

For an in-depth study of the issue, the student should study the literature from the additional readings list and specialized websites. It is also recommended that students communicate in professional community forums.

Students study educational, scientific literature and periodicals on an autonomous basis. They have the opportunity to discuss what they have read with the teachers of the discipline during scheduled consultations, with other students at colloquiums, as well as at lectures, asking the professor questions.

The control of autonomous work is carried out by the professor in charge. Depending on the teaching methodology, the following forms of continuous assessment can be used: a short oral or written survey before the start of classes, tests, control papers, written homework, essays, etc.

The assessment toolkit for the midterm assessment of students in the discipline (module) *(developed and issued in accordance with the requirements of the " Regulations for the Formation of Assessment Toolkit (FOS"), approved by the Rector's order No. 420 dated 05.05.2016).*

The code of the controlled competence or its part	Controlled Discipline Section	Controlled Discipline Topic	Assessment Toolkit (forms of control of mastering the professional program)											Scores Topics	Section scores
			Classroom work					Autonomous work							
			Survey	Test	Colloquium	Control Paper	Discussion	Essay	Homework	Report	Creative Project	Course Paper / project	Exam/Test		
UC-1, UC-2, PC-3	Раздел 1: Section 1: Introduction to the methodology of designing and working with information systems.	Section 1: Introduction to the methodology of designing and working with information systems.							10						10
UC-1, UC-2, PC-3	Раздел 2: Section 2: Designing and creating databases.	Creating data bases.				20			10						30
UC-1, UC-2, PC-3	Section 3: Information technologies in professional activity.	Methods of solving experimental problems in management.				10			10						20
UC-1, UC-2, PC-3		Report								20					20
UC-1, UC-2, PC-3		Credit with grade										20			20
		TOTAL				30			30	20		20			100

Information technology in Management

Examination Card No. 1.

1. Methods of processing expert opinions of project assessment. The concordance index. Example.
2. Genetic algorithms. Basic concepts. Application of genetic algorithms to find the maximum (minimum) of functions.
3. A task. Determine the minimum number of call center operators, if it is known that average number of calls per minute is 1.6, the average conversation lasts 8 seconds and the number of unserved customers may not exceed 10%.

Examination Card No. 2.

1. Basic definitions of graph theory. Adjacency and incidence matrices. Examples.
2. Optimization methods. Graphical solution of optimization problems.
3. A matrix of transition probabilities is provided

$$\| p_{ij} \| = \begin{vmatrix} 0,7 & 0,1 & 0,1 & 0,1 \\ 0,2 & 0,6 & 0 & 0,2 \\ 0,2 & 0 & 0,5 & 0,3 \\ 0 & 0 & 0 & 1 \end{vmatrix}.$$

Draw a state graph. Find the distribution of states for the first four steps, if it is known that at the initial moment of time the system is in a state s_1.

Examination Card No. 3.
1. Network planning. Assessment of the temporary characteristics of the project.
2. Cognitive methods in decision-making tasks.
3. A task. Solve the linear programming problem graphically.

$$\begin{cases} -2x + 2y \le 8; \\ x + 2y \le 14; \\ x + y \le 9; \\ 4x - y \le 16; \\ F = 2x + 3y - 4 \to max; \\ x \ge 0, y \ge 0. \end{cases}$$

As part of the exam, the mastering of all the competencies of the discipline can be controlled (depending on the question).

The set of examination cards includes the assessment criteria for the discipline developed by the teacher and approved at the meeting of the department.

Criteria for assessing of abswers to exam questions:
The answer to each exam is valued from 0 to 10 points:

Answer Assessment Criteria:	Scores		
	The answer does not meet the criteria	The answer partially meets the criteria	The answer fully meets the criteria
The answer is correct	0	1	2
The student answers without suggestive questions from the examiner	0	0.5	1
The student practically does not use the prepared draft	0	0.5	1
The answer demonstrates the student's confident command of the terminological and methodological apparatus of the discipline	0	1	2
The answer has a clear logical structure	0	1	2
The answer demonstrates the student's understanding of the connections between the subject of the question and other sections of the discipline and/or other disciplines	0	1	2

This Program has been developed in line with the requirements of the RUDN University Educational Standards.

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_____ _____ _____

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