

BUNIN YELETS STATE UNIVERSITY

WORKING PROGRAM OF THE DISCIPLINE **B1.C.04.02 Information Systems in Economics and Management**

Training area: *38.03.02 Management*

Orientation (profile): *Organization management and logistics*

Qualification (degree): *Bachelor's degree*

Form of study: *full-time*

Institute of Economics, Management and Service Technologies

Department of Economics and Management named after N. G. Nechaev

	full-time form	full- shape	time correspondence
Course	1		
Semester/ trimester	1,2		
1,2 Lectures and	36		
Laboratory classes	108		
Practical (seminar) classes			
including practical preparation			
of Forms a of intermediate certification	Credit, Exam-0,3		
Control	9		
Other forms of work			
Independent work	98,7,7		

Total hours: **252**

Labor intensity: **7** creditx units.

Developer of the work program:

Candidate of Pedagogical Sciences, Associate Professor SC.BV. Vorobyov

I. ORGANIZATIONAL AND METHODOLOGICAL SECTION

The purpose of studying the discipline is to develop обучающихся students ' competencies that allow them to successfully apply knowledge, skills and abilities in the field of using modern information technologies and systems in the field экономики of economics and management, to get a holistic view of состоянии the state and trends of automation of enterprise management tasks, to use a package of applied programs to solve economic problems.

Objectives of studying the discipline:

- to form a holistic view of modern economic information systems, trends in their development, as well as their specific implementations;
- develop practical skills использования инструментальных in using tools for automating management tasks;
- develop the ability to make timely and comprehensively informed decisions on the use of modern information and communication technologies in the organization.

Place of the discipline in the structure of the OPOP: implemented as part of the mandatory part of the block B1. Disciplines (modules).

Planned results of training in the discipline:

Code of competence	Indicators of achievement of competence	Planned results of training in the discipline
UC-1	Know: <ul style="list-style-type: none"> - methods of searching for information and working with it; - the essence of a systematic approach. 	Knows: <ul style="list-style-type: none"> - fundamentals of the implementation of information technologies and systems in economic activity; - basic methods of automation of enterprise management.
	Be able to: <ul style="list-style-type: none"> - analyze the problem, identify the stages of its solution, perform actions to solve it; - find various options for solving the problem, evaluate their advantages and risks. 	Can do: <ul style="list-style-type: none"> - use and analyze theoretical knowledge in the use of information systems and technologies; - conduct research on the state of the organization's automation processes and find ways to optimize them.
	Own: <ul style="list-style-type: none"> - skills in assessing the practical consequences of possible solutions to the problem; - skills of competent, logical, reasoned formulation of their own judgments and assessments. 	Owens: <ul style="list-style-type: none"> - skills in analyzing the current state of informatization of the organization's business processes; - methods of organizing optimal information technology support for management processes.
	Should Know:	Knows:

GPC-5	<ul style="list-style-type: none"> - methods of information and communication technologies and innovative technologies used in the modern economy to solve professional problems; - principles of solving standard problems of professional activity, search for scientific and technical information on the Internet and specialized databases. 	- basic types and principles of operation of corporate information systems.
	Be able to: <ul style="list-style-type: none"> - choose and apply information and innovative technologies, software tools for solving professional problems; - search for scientific and technical information using general and specialized databases. 	Cando: <ul style="list-style-type: none"> - substantiate the degree of effectiveness and scientific character of the implemented information systems.
	Own: <ul style="list-style-type: none"> - skills of using information systems and technologies to solve professional problems; - skills of innovation management to solve professional problems. 	Owens: <ul style="list-style-type: none"> - methods of information technology training and use of modern computer systems.
GPC-6	Should Know: <ul style="list-style-type: none"> - modern information technologies and principles of their operation. 	Knows: <ul style="list-style-type: none"> - technologies of using analytical methods in enterprise management information systems.
	Be able to: <ul style="list-style-type: none"> - choose modern information technologies based on an understanding of the principles of their operation for solving professional tasks. 	Cando: <ul style="list-style-type: none"> - apply methods of implementing information systems in practice.
	Own: <ul style="list-style-type: none"> - skills of using modern information technologies to solve problems of professional activity. 	Owens: <ul style="list-style-type: none"> - technologies of using modern computer systems in professional activities.

II. CONTENT AND SCOPE OF THE DISCIPLINE
with an indication of the number of hours allocated for students ' contact work
with a teacher (by type of training sessions) and for independent work

Full-time education

n /	a Name of sections and	topics Total	Classroom classes			Sam. rab.
			LK	PZ	LB	
	Section 1. Theoretical foundations of information systems in the economy.					
1.	Topic 1. Economic information as part of the information resource of society.	10	2		4	4
2.	Topic 2. Digital transformation of the economy.	14	2		8	4
3.	Topic 3. New information technologies and systems in the economy.	12	2		6	4
4.	Topic 4. Organizational foundations of information systems in the economy.	12	2		6	4
5.	Topic 5. Composition of information systems.	10	2		4	4
6.	Topic 6. Структура Structure of information systems.	12	2		6	4
7.	Topic 7. Functions of information economic systems.	12	2		6	4
8.	Topic 8. Application of general -purpose information technologies for computer implementation of economic activity tasks.	14	2		8	4
9.	Topic 9. Information technologies. Stages of their development.	12	2		6	4
	<i>Credit</i>					
	<i>Total for 1 semestre</i>	<i>108</i>	<i>18</i>		<i>54</i>	<i>36</i>
	including practical training	-				
	Section 2. Modern technologies, methods and features of data processing in solving economic problems.					
10.	Topic 1. Features of development and use of programs for solving economic problems by means of information technologies.	12	2		6	4
11.	Topic 2. Information storage technologies.	12	2		4	6
12.	Topic 3. OLAP systems and technologies.	16	2		6	8
13.	Topic 4. Data Mining данных Data Mining.	16	2		6	8
14.	Topic 5. Technologies of decision support systems.	14	2		8	4
15.	Topic 6. Technologies of expert systems.	16	2		6	8
16.	Topic 7. Basic properties and parameters of reference legal systems.	12	2		6	4
17.	Topic 8. Reference legal systems in Russia and abroad.	14	2		4	8
18.	Topic 9. Work in reference legalx systems.	22.7	2		8	12.7

	<i>Control</i>	9				
	<i>Exam</i>	0.3				
	<i>Total for 2 cemesre</i>	144	18		54	62.7
	incl. practical training	-				
	TOTAL:	252	36		108	98.7,7

Full-time and part-time education (not implemented)

Part-time education (not implemented)

III. EVALUATION MATERIALS FOR THE CURRENT AND FUTURE EVALUATION OF THE PROJECT. INTERMEDIATE CERTIFICATION OF STUDENTS IN THE DISCIPLINE

The current certification is conducted in the form of a test paper (in the traditional or test form).

Standard version of the control work

In the traditional form:

1 option

Create an **Учет за неделю** automated form on the Weekly Accounting sheet for monthly sales accounting of the Paradoxus shopping and purchasing database, as shown in Figure 1. The **Purchase Amount**, **Discount (%)**, and **Total Payable columns** should be filled in using formulas. Please note that a 5% discount is given only to those customers whose purchase amount will be more than 15,000 rubles. Calculate the **Отчет** frequency of product purchases for the specified week on the Report sheet as shown in Figure 2.

	A	B	C	D	E	F	G	H
1	Учет продаж торгово-закупочной базы «Парадокс» за неделю							
2	(с 17.04.2017г. по 22.04.2017г.)							
3								
4	Дата	Код товара	Наименование товара	Цена за единицу	Количество	Сумма покупки	Скидка (%)	Итого к оплате
5	17.04.2017	1004	Холодильник	13 500,00 Р	3			
6	17.04.2017	1003	Стиральная машина	19 300,00 Р	6			
7	17.04.2017	1002	Утюг	3 700,00 Р	15			
8	17.04.2017	1001	Пылесос	7 500,00 Р	8			
9	18.04.2017	1003	Стиральная машина	19 300,00 Р	12			
10	18.04.2017	1004	Холодильник	13 500,00 Р	3			
11	18.04.2017	1002	Утюг	3 700,00 Р	7			
12	19.04.2017	1004	Холодильник	13 500,00 Р	4			
13	19.04.2017	1002	Утюг	3 700,00 Р	4			
14	20.04.2017	1002	Утюг	3 700,00 Р	9			
15	20.04.2017	1001	Пылесос	7 500,00 Р	12			
16	21.04.2017	1002	Утюг	3 700,00 Р	10			
17	21.04.2017	1003	Стиральная машина	19 300,00 Р	4			
18	21.04.2017	1001	Пылесос	7 500,00 Р	14			
19	22.04.2017	1003	Стиральная машина	19 300,00 Р	8			
20	22.04.2017	1001	Пылесос	7 500,00 Р	9			
21								

Figure 1. Tabular form of the product sales accounting sheet

	A	B	C
1	Отчет о частоте покупки товара за неделю		
2			
3	Код товара	Наименование товара	Частота покупки товара
4	1001	Пылесос	
5	1002	Утюг	
6	1003	Стиральная машина	
7	1004	Холодильник	

Figure 2. Tabular form of the product purchase frequency report sheet

Option 2

Create an **Учет заказов** automated order tracking form for Viola Shopping Center food sales on the Order Accounting sheet, as shown in Figure 1. The **Order Amount**, **Sales Form**, and **Overdue** columns in the main table should be filled in using formulas. Formulas are also used to fill in empty cells in an additional table.

Please note that the **Sales Form** field must contain the values **Wholesale** or **Retail**, depending on the order amount. If the product order amount exceeds 80,000 rubles, the value is set to **Wholesale**, otherwise-**Retail**.

Поле **The Expired** field must contain the values **Yes** or **No**, depending on how the **Order Date** and **Product Expiration Date** are compared.

In the additional table located at the bottom of Figure 1, all empty fields are filled in using the **COUNTIF** and **MAX** functions.

	A	B	C	D	E	F	G	H	I	J
1	Учет заказов торгового центра «Виола» по продаже продуктов питания									
2										
3	Дата заказа	Поставщик	Наименование товара	Единица измерения	Количество	Цена за единицу	Сумма заказа	Форма продажи	Срок годности	Просрочен
4	20.04.2017	ИП "Касимов"	Сок Яблочный	Упаковка 6 шт.	120	560,00 Р			12.12.2017	
5	20.04.2017	ИП "Касимов"	Сок Апельсиновый	Упаковка 6 шт.	90	670,00 Р			05.07.2017	
6	20.04.2017	ИП "Касимов"	Сок Мультифруктовый	Упаковка 6 шт.	150	610,00 Р			19.04.2017	
7	20.04.2017	ИП "Алексеев"	Конфеты "Маска"	Коробка 5 кг.	30	1 800,00 Р			03.08.2017	
8	21.04.2017	ИП "Алексеев"	Конфеты "Белочка"	Коробка 6 кг.	45	2 400,00 Р			15.10.2017	
9	21.04.2017	ИП "Алексеев"	Зефир в шоколаде	Коробка 3 кг.	20	1 500,00 Р			19.04.2017	
10	21.04.2017	ИП "Леонов"	Помидоры	Коробка 10 кг.	15	3 450,00 Р			10.06.2017	
11	22.04.2017	ИП "Леонов"	Огурцы	Коробка 7 кг.	10	2 100,00 Р			24.05.2017	
12	22.04.2017	ИП "Леонов"	Бананы	Коробка 10 кг.	35	2 900,00 Р			14.07.2017	
13	22.04.2017	ИП "Леонов"	Капуста	Сетка 30 кг.	10	860,00 Р			17.04.2017	
14	22.04.2017	ИП "Леонов"	Картофель	Сетка 40 кг.	25	1 000,00 Р			22.11.2017	
15	22.04.2017	ИП "Леонов"	Бурлак	Сетка 5 кг.	40	340,00 Р			17.07.2017	
16										
17		Количество оптовых заказов								
18		Количество розничных заказов								
19		Наибольшая сумма заказа								
20		Наибольшее количество заказа								
21		Количество просроченного товара								

Figure 1. Tabular form of the order accounting sheet

In the test form:

1. Specify an item whose value does not belong to the division of automated information systems by the scope of operation of the management object:

- a) AIS of transport;
- b) AIS of communication;
- c) industry-specific AIS;
- d) AIS industry.

2. Automated control systems are an automated information system designed for:

- a) automation of all or most of the management tasks solved by the collective management body;
- b) automation of the activities of specific officials;
- c) centralization of decision-making;
- d) providing operational communication with other sources of information in the management system.

3. The MRP management methodology can be summarized as:

- a) management based on the highest organization of defect-free production;
- b) resource management within a single corporation;
- c) management of the extended production chain;
- d) planning of production resources.

4. Select the items that are included in the classification of automated information systems by level in the public administration system:

- a) industry-specific AIS;
- b) training AIS;
- c) territorial AIS;
- d) cross-industry AIS.

5. An automated information system designed to automate the activities of specific officials in the performance of their official duties in the process of managing personnel or technical means is called:

- a) accounting information system;
- b) decision support system;
- c) information and settlement system;
- d) communication information system.

6. What type of automated information systems is mainly used for training specialists in the education system, for retraining and advanced training of employees in various industries:

- a) territorial AIS;
- b) financial AIS;
- c) management AIS;
- d) training AIS.

7. The ERP management methodology can be briefly described as:

- a) management based on the highest organization of defect-free production;
- b) resource management within a single corporation;
- c) management of the extended production chain;
- d) planning of production resources.

8. Automated information systems designed to solve mathematically complex problems that require large amounts of a wide variety of information are called:

- a) a decision support system;
- b) an intelligent information system;
- c) an automated information and computing system;
- d) an automated training system.

9. Systems designed to automate the activities of departments of a project organization or a team of specialists in the process of developing product projects based on the use of a single information base, mathematical and graphical models are called:

- a) information and settlement systems;
- b) modeling centers;
- c) design automation systems;
- d) automated help systems.

10. Automated information systems designed to collect, store, search and issue information of a reference nature to consumers in the required form are called:

- a) automated reference books;
- b) automated file cabinets;
- c) automated information and reference systems;
- d) automated office management systems.

11. The JIT management methodology can be summarized as:

- a) management based on the highest organization of defect-free production;
- b) resource management within a single corporation;
- c) management of the extended production chain;
- d) planning of production resources.

12. A set of methods and software and hardware integrated into a technological chain that provides the collection, processing, storage, distribution and display of information in order to reduce the complexity of the processes of using information resources, as well as increase their reliability and efficiency, is called:

- a) information management system;
- b) information technology;
- c) the information process;
- d) an information resource.

13. List the points on which automated information technologies in the economy are based:

- a) hardware;
- b) visual aids;
- c) software tools;
- d) virtual funds.

14. Name the types of information technology architecture of an information system:

- a) centralized data processing;
- b) file-server architecture;
- c) server-to-server architecture;
- d) client-server architecture.

15. According to the type of user interface, automated information technologies are divided into:

- a) local;
- b) dialog boxes.
- c) network services.
- d) batch files.

16. According to the class of implemented technological operations, automated information technologies are divided into:

- a) multimedia systems;
- b) hypertext systems;
- c) working with a text editor;
- d) all of the above and others.

17. What type of automated information systems is not suitable for their division according to the method of building a network:

- a) local;
- b) traditional ones.
- c) multi-level ones.
- d) distributed.

18. Centralized data processing assumes that the following functions are performed on the same local computer:

- a) a database;
- b) software tools of the user interface;
- c) software tools for data processing applications;
- d) all of the above.

19. A complex, detailed model structure of information aggregates describing all the features of the subject area, including facts, rules, and meta-knowledge, is called:

- a) a database;
- b) an information system;
- c) the knowledge base;
- d) a database management system.

20. An automated workplace is:

- a) a special mode of operation of computer networks that allows transmitting and receiving messages from one subscriber to another;
- b) a set of information, software and technical resources that provides the end user with data processing and automation of management functions in a specific subject area;
- c) a network of mixed topology, which includes several local area networks connected to each other by modem communication;
- d) a set of tools, standards, and signals that provide data exchange between devices.

Intermediate certification of students is carried out in the form of a test and exam using the following assessment materials: a list of questions for the test, a list of questions for the exam.

Questions for the test
(1 semester of full-time study)

1. Basic concepts of economic information systems (EIS).
2. Components of economic information systems.
3. Classification of automated systems for processing economic information.
4. Principles of EIS construction and operation.
5. IP life cycle.
6. Functional and supporting subsystems of EIS.
7. Organizational and legal support of EIS.
8. Economic information. Its classification and presentation forms.
9. System of classification and coding of technical and economic information.
10. Forms, methods and means of automating information activities in the field of economics.
11. Text documentation processing system.
12. Archiving files.
13. Spreadsheets.
14. Statistical analysis packages for solving economic problems.
15. Objective necessity of the informatization process, directions of its development.
16. Information system, its role and place in the management system.
17. Information business, information market, information management.
18. Information service and information infrastructure.
19. Classification of information systems.
20. Structure and scheme of functional and multitasking information systems.
21. Main functions of the production orientation information system.
22. Influence of the information system on the organization's management structure.
23. System analysis is the scientific basis for creating information systems.
24. Standardization is a technological basis for the development of information systems.
25. The concept of open systems.
26. Profiles of open information systems standards.
27. Creating information systems based on their life cycle standards.
28. Stages of creating information systems with a focus on business processes.
29. Efficiency of information systems.
30. Evaluation and selection of information systems and technologies.
31. Structure and content of information technologies.
32. Content of the main technological operations.
33. General structure and content of information resources of the enterprise.
34. Normative and methodological base of management documentation.
35. Classification and coding of economic information.

Questions for the exam
(2 semester full-time study)

1. Electronic document management.
2. Own in-machine information resources of the enterprise.
3. Databases and their application for solving economic problems.
4. Centralized and distributed databases, their application in the economic sphere.
5. Data warehouses and their use for solving analytical problems.
6. The main directions in the development of infocommunication technologies.
7. Forms of implementation of infocommunication technologies in business.
8. General characteristics of management decisions and methods of their formation.
9. Stages of decision-making and criteria for their evaluation.
10. Problems of informatization of society in the Russian Federation.
11. Concept, features and structure of economic information.
12. Automated information systems and their classification.
13. Automated information technologies, their development and classification.
14. Automated workplace – a means of automating the work of the end user.
15. Structure and content of information support.
16. Classifiers, codes and technology of their application.
17. Documentation and technology of its formation.
18. Applications of electronic document management.
19. Structure and organization of in-machine information support.
20. Stages of creating a database and data bank.
21. Concept, goals and objectives of technological support.
22. Dialog mode for automated information processing.
23. Network mode for automated data processing.
24. Text information processing technology.
25. Technology for processing tabular information.
26. Database management systems.
27. Working with data using queries. Creating requests.
28. Organization of communication interaction with external organizations (tax service, Treasury, etc.)
29. Principles of construction and topology of computer networks. Classification of computer networks.
30. Dialog and network mode of data processing.

IV. LIST OF LITERATURE REQUIRED FOR MASTERING DISCIPLINES

4.1. Basic literature

1. Temnova N. K., Rozhdestvenskaya N. V., Yakovlev T. V. Korporativnye informatsionnye sistemy : uchebnoe posobie : [16+] / N. K. Temnova, N. V. Rozhdestvenskaya, T. V. Yakovlev; Russian State Pedagogical University named after A. I. Herzen. Saint Petersburg: A. I. Herzen Russian State Pedagogical University (RSPU), 2022. 160 p.: ill. Available by subscription. - URL: <https://biblioclub.ru/index.php?page=book&id=709769> (accessed: 20.04.2024.04). - ISBN 978-5-8064-3193-7. - Text: electronic.

4.2. Additional literature

1. Information management : a textbook / T. N. Agapova, A. O. Vasiliev, K. V. Vasilieva [et al.]; under the scientific editorship of N. D. Eriashvili, F. G. Myshko ; under the general editorship of S. G. Simagina, I. M. Rassolova. - 3rd ed., reprint. Moscow: Unity-YunitiDana Publ., 2023, 280 p. (in Russian). - Access mode: by subscription. - URL: <https://biblioclub.ru/index.php?page=book&id=712633> (accessed: 22.04.202404). - Bibliogr. in the book-ISBN 978-5-238-03763-9. - Text: electronic.

V. LIST OF RESOURCES OF THE INFORMATION AND TELECOMMUNICATION NETWORK "INTERNET" REQUIRED FOR MASTERING THE discipline

№ Item No	. Link to the information resource	Name of the development in electronic form	Availability
1.	http://www.aup.ru/Административно-управленческий	portal. It includes an electronic library of business literature and documents, a business forum on various aspects of the theory and practice of organization, planning and management of enterprises. The sections also contain ready-made business plans, statistical reference books, and analytical reviews.	Free access
2.	http://window.edu.ru/	The information system "Single window of access to educational resources" provides free access to the catalog of educational Internet resources and a full-text electronic educational and methodical library for general and professional education	Free access

VI. MODERN PROFESSIONAL DATABASES AND INFORMATION AND REFERENCE SYSTEMS

1	http://www.biblioclub.ru.biblioclub.ru	Electronic Library System (EBS) University Library online	Registration via any university computer. In the future, unlimited individual access is provided from any point where there is access to the Internet
2	www.garant.ru	www.garant.ru Legal information Portal	Free access

3	www.elibrary.ru	Russian information portal in the field of science, technology, medicine and education	Free access
4	www.consultant.ru	Russian Computer Reference and legal system	Free access

VII. LICENSED AND FREELY DISTRIBUTED SOFTWARE software

When implementing an academic discipline, the following licensed and freely distributed software is used:

- Microsoft Windows 7 Professional 64-bit;
- Microsoft Office Professional Plus 2007;
- Kaspersky Endpoint Security 10 for Windows.
- Information and legal support of GARANT.

VIII. EQUIPMENT AND TECHNICAL MEANS OF TRAINING REQUIRED FOR THE IMPLEMENTATION OF THE EDUCATIONAL PROCESS IN THE DISCIPLINE, НЕОБХОДИМЫЕ ДЛЯ ОСУЩЕСТВЛЕНИЯ ОБРАЗОВАТЕЛЬНОГО ПРОЦЕССА ПО ДИСЦИПЛИНЕ

Training sessions are held in classrooms equipped with specialized furniture, including stationary or portable teaching equipment (projector, screen, computer / laptop).

Laboratory classes, group and individual consultations, current and intermediate attestations are conducted in specialized classrooms equipped with automated workstations with computers.

Independent work is carried out in classrooms equipped with computer equipment with the ability to connect to the Internet and provide access to the electronic information and educational environment of the university.