



**MINISTRY OF SCIENCE AND HIGHER EDUCATION
OF THE RUSSIAN FEDERATION**
Federal State Budgetary Educational Institution of Higher Education
"IRKUTSK STATE UNIVERSITY"
SAF, Baikal International Business School (Institute)
Strategic and Financial Management Department



APPROVED:

Dean of SAF, Baikal International Business
School (institute)

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April 14, 2025

Syllabus

Discipline Б1.О.24 Information Technologies

Major 27.03.05 Innovatics

Specialization: Management of Innovative and IT Projects and Products

University Degree: Bachelor

Full time

Approved by the Academic and
Methodological Council of Baikal
International Business School (institute)
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Management Department
Protocol № 9 of March 21, 2025

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I. GOAL AND OBJECTIVES OF THE DISCIPLINE (MODULE)

Goal: to form modern skills and abilities in the field of information technology application by studying the formation of a holistic and systematic view of the basic concepts, categories and concepts of modern information technologies, the principles of systematization, display of information and the acquisition of skills in the use of general and specialized information and automated systems.

Objectives:

In order to achieve the goal in the course of training, it is necessary to meet the following objectives:

1. To form a conceptual apparatus in terms of the basic concepts of modern information technologies, principles and methods of building and using modern information systems.
2. To form skills and abilities in terms of analyzing IT products and its use within the framework of modern automated systems of information support for professional activities.
3. To form skills and abilities to use information support systems in professional activities.

II. PLACE OF THE DISCIPLINE IN THE CPEP STRUCTURE

The academic discipline (module) "**Б1.О.24 Information Technologies**" belongs to the part of the undergraduate educational program formed by stakeholders in the educational process, for the field of study 27.03.05 Innovatics.

The discipline is studied *full-time, in the 1st and 2nd semesters.*

For the study of this academic discipline (module), the knowledge formed as a result of the development of general education programs is sufficient.

List of subsequent academic disciplines that require knowledge, skills and abilities formed by this academic discipline:

Information Technologies in Innovative Project Management

III. REQUIREMENTS FOR THE DISCIPLINE LEARNING OUTCOMES

The process of mastering the discipline is aimed at the formation of elements of the following competencies in accordance with the Federal State Educational Standards of Higher Education in the direction of training 27.03.05 Innovation.

List of Planned Learning Outcomes for the Discipline, Mapped to Competency Achievement Indicators

Competency	Competency Indicators	Learning outcomes
<i>GPC-1.</i> Ability to analyze professional tasks based on the principles, laws, and methods of mathematics, natural sciences, and engineering	<i>GPC-1.3.</i> Analyzes professional tasks based on the principles, laws and methods of engineering sciences.	To be able to: —analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences
<i>GPC-2.</i> Is able to formulate tasks of professional activity based on knowledge of specialized sections of mathematical, technical and natural science disciplines (modules)	<i>GPC-2.2.</i> Formulates tasks of professional activity based on knowledge of specialized sections of technical sciences	To be able to: —formulate the tasks of professional activity on the basis of knowledge of specialized sections of technical sciences
<i>GPC-7.</i> Is able to understand the principles of modern information	<i>GPC-7.1.</i> Is able to use data processing methods (analysis, visualization) to	To be able to: — use data processing methods (analysis, visualization) to support

<p>technologies and use them to solve professional tasks</p>	<p>support decision-making <i>GPC-7.2.</i> Possesses skills in working with specialized software; basic automation methods for solving professional tasks</p>	<p>decision-making. — work with specialized software; basic methods of automation for solving problems of professional activity</p>
<p><i>GPC-10.</i> Is able to develop algorithms and computer programs suitable for practical application</p>	<p><i>GPC-10.1.</i> Possesses methods for code evaluation and optimization to solve practical problems <i>GPC-10.2.</i> Proficient in Algorithm Implementation using a Programming Language <i>GPC-10.3.</i> Proficient in code profiling and optimization techniques to solve practical problems</p>	<p>To be able to: —build effective algorithms for solving problems of professional activity. —implement algorithms in one of the programming languages. —evaluate and optimize code to solve practical problems.</p>

IV. CONTENTS AND DISCIPLINE STRUCTURE

The volume of the discipline is 6 credits, 216 hours, including 8 hours for summative assessment in the form of a credit with grade, 27 hours for summative assessment in the form of an exam. Form of summative assessment: credit with grade - 1 semester, exam - 2 semester.

4.1. Discipline Contents, Structured by Topics, with Indicated Types of Classes and Allocated Academic Hours

№	Discipline Section/ Theme	Semester	Total hrs	Types of Educational Activities, Including Self-Study, Practical Sessions, and Workload (in hrs)				Formative Assessment Formats; Summative Assessment Formats
				Teacher Contact Hrs			Self-Study	
				Lectures	Practical Sessions	Consultations, Self-Study Monitoring, Summative Assessment		
1	2	3	4	5	6	7	8	9
1.	Section 1. Information Technologies in Modern Professional Activity	1	108	16	34	9	49	
2.	Topic 1.1. Conceptual and terminological apparatus of information technologies.	1		4	8		12	Test
3.	Topic 1.2. Key concepts of working with information processing systems for general and professional purposes.	1		4	8		12	Test, case study
4.	Topic 1.3. Fundamental principles, features of operation and purpose of electronic table processors in data processing (analysis, visualization) to support decision-making.	1		4	9		12	Test, case study
5.	Topic 1.4 Systematization of information during its processing by electronic spreadsheet processors.	1		4	9	1	13	Test, case study
6.	Summative assessment	1	8	0	0	8	0	Credit with grade

7.	Section 2. Data Processing in Financial and Economic Systems	2	108	16	34	12	27	
8.	Topic 2.1. Fundamentals of algorithmization for solving problems of systematization and analysis of data in electronic table processors.	2		4	8	1 cons	6	Test, case study
9.	Topic 2.2. Basic principles of building modern automated information processing systems.	2		4	8	1 cons	7	Test, case study
10.	Topic 2.3. Fundamentals of Building Effective Algorithms in the Development of Web Applications in Professional Activity Systems.	2		4	9	1 DAC	7	Test, case study
11.	Topic 2.4. Electronic signatures and electronic document management - basic concepts, technical equipment, current state.	2		4	9	1 DAC	7	Test, case study
12.	Summative assessment	2	27	0	0	8	19	Exam
13.	TOTAL HOURS IN THE DISCIPLINE		216	48	82	23	46	

4.2. Plan for Out-of-Class Student Self-Study of the Discipline

Semester	Section, Themes	Self-Study			Assessment Tool	Self-Study Educational and Methodological Support
		Type of Self-study	Deadlines	Load		
1	Section 1. Information Technologies in Modern Professional Activity					
1	Topic 1.1. Conceptual and terminological apparatus of information technologies.	Study of lecture material, educational literature, preparation for the test	Week 1-4	12	Test	Informatics: a textbook for universities / V. K. Volk. — Moscow : Yurayt Publishing House, 2022. — 207 p. — (Higher Education). — ISBN 978-5-534-14093-4.

Semester	Section, Themes	Self-Study			Assessment Tool	Self-Study Educational and Methodological Support
		Type of Self-study	Deadlines	Load		
1	Topic 1.2. Key concepts of working with information processing systems for general and professional purposes.	Study of lecture material, educational literature, preparation for the test	Weeks 5-8	12	Test	Informatics: a textbook for universities / V. K. Volk. — Moscow : Yurayt Publishing House, 2022. — 207 p. — (Higher Education). — ISBN 978-5-534-14093-4.
1	Topic 1.3. Fundamental principles, features of operation and purpose of electronic table processors in data processing (analysis, visualization) to support decision-making.	Study of lecture material, educational literature, preparation for the test	Weeks 9-13	12	Test	Informatics: a textbook for universities / V. K. Volk. — Moscow : Yurayt Publishing House, 2022. — 207 p. — (Higher Education). — ISBN 978-5-534-14093-4.
1	Topic 1.4 Systematization of information during its processing by electronic spreadsheet processors.	Study of lecture material, educational literature, preparation for the test	Weeks 14-16	13	Test	Informatics: a textbook for universities / V. K. Volk. — Moscow : Yurayt Publishing House, 2022. — 207 p. — (Higher Education). — ISBN 978-5-534-14093-4.
Total amount of self-study in the section (hour)				49		
2	Section 2. Data Processing in Financial and Economic Systems					

Semester	Section, Themes	Self-Study			Assessment Tool	Self-Study Educational and Methodological Support
		Type of Self-study	Deadlines	Load		
2	Topic 2.1. Fundamentals of algorithmization for solving problems of systematization and analysis of data in electronic table processors.	Study of lecture material, educational literature, preparation for the test	Week 1-4	6	Case Study	<p>Kozhevnikova, G. P. Information Systems and Technologies in Marketing: A Textbook for Higher Educational Institutions / G. P. Kozhevnikova, B. E. Odintsov. — Moscow : Yurayt Publishing House, 2022. — 444 p. — (Higher Education). — ISBN 978-5-534-07447-5.</p> <p>Informatics for Economists. Practicum : textbook for universities / V. I. Zavgorodny [i dr.] ; edited by V. I. Zavgorodny. — 3rd ed., revised and supplemented — Moscow : Yurayt Publishing House, 2022. — 298 p. — (Higher Education). — ISBN 978-5-534-11309-9.</p>

Semester	Section, Themes	Self-Study			Assessment Tool	Self-Study Educational and Methodological Support
		Type of Self-study	Deadlines	Load		
2	Topic 2.2. Basic principles of building modern automated information processing systems.	Study of lecture material, educational literature, preparation for the test	Weeks 5-8	7	Case Study	Informatics for Economists. Practicum : textbook for universities / V. I. Zavgorodny [i dr.] ; edited by V. I. Zavgorodny. — 3rd ed., revised and supplemented — Moscow : Yurayt Publishing House, 2022. — 298 p. — (Higher Education). — ISBN 978-5-534-11309-9.
2	Topic 2.3. Fundamentals of Building Effective Algorithms in the Development of Web Applications in Professional Activity Systems.	Study of lecture material, educational literature, preparation for the test	Weeks 9-13	7	Test	Informatics for Economists. Practicum : textbook for universities / V. I. Zavgorodny [i dr.] ; edited by V. I. Zavgorodny. — 3rd ed., revised and supplemented — Moscow : Yurayt Publishing House, 2022. — 298 p. — (Higher Education). — ISBN 978-5-534-11309-9.

Semester	Section, Themes	Self-Study			Assessment Tool	Self-Study Educational and Methodological Support
		Type of Self-study	Deadlines	Load		
2	Topic 2.4. Electronic signatures and electronic document management - basic concepts, technical equipment, current state.	Study of lecture material, educational literature, preparation for the test	Weeks 14-16	7	Test	Kozhevnikova, G. P. Information Systems and Technologies in Marketing: A Textbook for Higher Educational Institutions / G. P. Kozhevnikova, B. E. Odintsov. — Moscow : Yurayt Publishing House, 2022. — 444 p. — (Higher Education). — ISBN 978-5-534-07447-5.
Total amount of self-study in the section (hour)				27		
Total amount of self-study in the discipline (hour)				76		

4.3. Learning Content

№	Name of the topic	Content of the topic
1.	Section 1. Information Technologies in Modern Professional Activity	
2.	Topic 1.1. Conceptual and terminological apparatus of information technologies.	<p>The concepts of IT, the components of IT, the concepts of information, data, knowledge. Presentation of information and amount of information. Textual, graphic, audio forms of information presentation. The concept of coding. Encodings, encoding tables. Methods of encoding graphic, audio and video information. The concept of computer architecture. Processor, memory, input-output means - basic concepts, functions, purpose, role in computer architecture. Modern processor architectures, storage and I/O technologies. The concept of an operating system, the main tasks and components of operating systems. The concept of system software, types of system software, its purpose. Applied software is the concept, purpose, types of applied software and ways of its classification. The concept of a computer network, components of a computer network. General principles of computer networks, types of computer networks and methods of their classification</p>
3.	Topic 1.2. Key concepts of working with information processing systems for general and professional purposes.	<p>Information processing systems as a tool of professional activity. Preparation of presentations to present ideas and research results. The concept of presentation, the principles of building scientific (academic) presentations. Features of presentation design, features of presenting presentations for conferences, seminars and other scientific events. Principles of using word processors to present the results of research and scientific works. Basic tasks when working with a word processor. Features of modern word processors. Use of styles, automatic table of contents and links when making up texts. Use of cloud services for the preparation of text documents and presentations.</p>
4.	Topic 1.3. Fundamental principles, features of operation and purpose of electronic table processors in data processing (analysis, visualization) to support decision-making.	<p>The concept of a spreadsheet, a book, a sheet, a cell. How to address and access spreadsheet items. Relative and absolute references. Methods of data entry, methods of data entry control. Format cells. The concept of functions and formulas. Types of formulas and functions (financial, textual, logical, mathematical, date and time functions). Methods of constructing formulas and their verification. Features of working with formulas. The concept of sorting, alphabetical sorting, multiple sorting.</p>
5.	Topic 1.4 Systematization of information during its processing by electronic spreadsheet processors.	<p>Apply filters and sorting to organize information. Formatting table items. Conditional formatting – use built-in rules, create your own. Types of diagrams in tabular processors. Systematization of information for the construction of certain types of diagrams. Basic</p>

		substitution when building diagrams. Combo charts. . The concept of a pivot table, the essence and structure of pivot tables, the tasks of systematizing information on the basis of pivot tables. PivotTable Construction, PivotCharting based on PivotTables. Algorithm and practical examples of data analysis based on the selection of parameters. Algorithm and practical examples of data analysis based on data tables and parameter sensitivity analysis. Algorithm and practical examples of data analysis based on the scenario manager and scenario modeling.
6.	Section 2. Data Processing in Financial and Economic Systems	
7.	Topic 2.1. Fundamentals of algorithmization for solving problems of systematization and analysis of data in electronic table processors.	The task of data systematization, the concept of systematization. The concept of a macro, examples of macros. Macro recording capabilities, macro storage methods. Visual Basic fundamentals include data types, sequential calculations, branches, loops, spreadsheet object model elements, controls in graphical user interfaces, procedures, and functions.
8.	Topic 2.2. Basic principles of building modern automated information processing systems.	The concept of application software, its architecture. The main elements of the software architecture are the user interface, client, server, and data storage tool. Types of architectures – client-server, desktop, web applications, features of their functioning, practical examples. The concept of a user scenario, user story, their purpose and interrelation. Types of user scenarios, methods and algorithms for their construction and application. The concept of a control element, types of control elements. Controls in HTML - elements, attributes, and how to set them. The concept of a Cascading Style Sheet, types of Cascading Style Sheets.
9.	Topic 2.3. Fundamentals of Building Effective Algorithms in the Development of Web Applications in Professional Activity Systems.	The main stages of developing a modern web application. The concept of variables, data types, functions, operators of the PHP programming language. Basic language constructions (assignment, types of branching according to conditions, types of cycles). Integration of programming languages when writing web applications (css, javascript, java, bootstrap, etc.)
10.	Topic 2.4. Electronic signatures and electronic document management - basic concepts, technical equipment, current state.	The concept of electronic signature, definition of electronic signature. Legal regulation of electronic document management. Symmetric and asymmetric encryption, types of electronic signatures. Means of generating and confirming electronic signatures, the concepts of public and private keys, the scheme of verification of the electronic signature key. The concept of electronic document management, types of electronic

		document management. Technical equipment of EDM participants - the main elements and their purpose. The current state of electronic document management in interaction with the state. Examples of interaction.
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4.3.1. List of Seminars, Practical Sessions and Laboratory Work

№	Theme Number	Seminars, Practical Sessions and Laboratory Work	Load (hr.)	Assessment Tools	Developed Competencies (Indicators)
1	2	3	4	6	7
1	Topic 1.1.	Conceptual and terminological apparatus of information technologies.	9	Case Study	GPC-1.3, GPC-2.2
2	Topic 1.2.	Key concepts of working with information processing systems for general and professional purposes.	9	Case Study	GPC-1.3, GPC-2.2
3	Topic 1.3.	Fundamental principles, features of operation and purpose of electronic table processors in data processing (analysis, visualization) to support decision-making.	9	Case Study	GPC-1.3, GPC-2.2, GPC-7.1, GPC-7.2
4	Topic 1.4	Systematization of information during its processing by electronic spreadsheet processors.	9	Case Study	GPC-1.3, GPC-2.2, GPC-7.1, GPC-7.2
6	Topic 2.1.	Fundamentals of algorithmization for solving problems of systematization and analysis of data in electronic table processors.	8	Case Study	GPC-7.2, GPC-10.1
7	Topic 2.2.	Basic principles of building modern automated information processing systems.	8	Case Study	GPC-1.3, GPC-7.2
8	Topic 2.3.	Fundamentals of Building Effective Algorithms in the Development of Web Applications in Professional Activity Systems.	8	Case Study	GPC-10.1, GPC-10.2, GPC-10.3
9	Topic	Electronic signatures	8	Case Study	GPC-1.3,

	2.4.	and electronic document management - basic concepts, technical equipment, current state.			GPC-7.2
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4.3.2. List of Topics (Questions) Assigned for Independent Work as Part of Student Self-Study

№	Theme	Task	Competency	Indicators
1	2	3	4	5
1	Topic 1.1. Methods of encoding graphic, audio and video information. The concept of computer architecture. The concept of system software, types of system software, its purpose. Basics of the International Association of Internet Networks – Basic Concepts	Prepare for the test	GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences GPC-2. Able to formulate the tasks of professional activity based on knowledge of specialized sections of mathematical, technical and natural science disciplines (modules)	GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences GPC-2.2. Is able to formulate the tasks of professional activity based on knowledge of the specialized sections of technical sciences
2	Topic 1.2. Information processing systems as a tool of professional activity. Features of presentation design, features of presentation presentation. Use of cloud services for the preparation of text documents and presentations.	Prepare for the test	GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences GPC-2. Able to formulate the tasks of professional activity based on knowledge of specialized sections of mathematical, technical and	GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences GPC-2.2. Is able to formulate the tasks of professional activity based on knowledge of the specialized sections of technical sciences

			natural science disciplines (modules)	
3	<p>Topic 1.3. Certain types of formulas and functions (financial, textual, logical, mathematical, date and time functions). Methods of constructing formulas and their verification.</p>	Prepare for the test	<p>GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences</p> <p>GPC-2. Able to formulate the tasks of professional activity based on knowledge of specialized sections of mathematical, technical and natural science disciplines (modules)</p> <p>GPC-7. Able to understand the principles of modern information technology and use them to solve professional problems</p>	<p>GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences</p> <p>GPC-2.2. Is able to formulate the tasks of professional activity based on knowledge of the specialized sections of technical sciences</p> <p>GPC-7.1. Is able to use data processing methods (analysis, visualization) to support decision-making</p> <p>GPC-7.2. Possesses the skills of working with specialized software; basic methods of automation for solving problems of professional activity</p>
4	<p>Topic 1.4. Certain types of diagrams in table processors. Combo charts. Build PivotCharts from PivotTables.</p> <p>Algorithm and practical examples of data analysis based on the scenario manager and scenario modeling.</p>	Prepare for the test	<p>GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences</p> <p>GPC-2. Able to formulate the tasks</p>	<p>GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences</p> <p>GPC-2.2. Is able to formulate the tasks of professional</p>

			<p>of professional activity based on knowledge of specialized sections of mathematical, technical and natural science disciplines (modules)</p> <p>GPC-7. Able to understand the principles of modern information technology and use them to solve professional problems</p>	<p>activity based on knowledge of the specialized sections of technical sciences</p> <p>GPC-7.1. Is able to use data processing methods (analysis, visualization) to support decision-making</p> <p>GPC-7.2. Possesses the skills of working with specialized software; basic methods of automation for solving problems of professional activity</p>
5	<p>Topic 2.1. Visual Basic Language Fundamentals – Elements of the Spreadsheet Object Model.</p>	<p>Prepare for the test</p>	<p>GPC-7. Able to understand the principles of modern information technology and use them to solve professional problems</p> <p>GPC-10. Able to develop algorithms and computer programs suitable for practical application</p>	<p>GPC-7.2. Possesses the skills of working with specialized software; basic methods of automation for solving problems of professional activity</p> <p>GPC-10.1. Knows the basics of algorithmization and the principles of building effective algorithms</p>
7	<p>Topic 2.2. The concept of user scenario, user story, their purpose and interrelation.. Controls in HTML - elements, attributes, and how to set them.</p>	<p>Prepare for the test</p>	<p>GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences</p> <p>GPC-7. Able to understand the</p>	<p>GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences</p> <p>GPC-7.2. Possesses the skills of working with specialized</p>

			principles of modern information technology and use them to solve professional problems	software; basic methods of automation for solving problems of professional activity
8	Topic 2.3. Types of variables, data types, functions, operators of the PHP programming language. Basic language constructions (assignment, types of branching according to conditions, types of cycles).	Prepare for the test	GPC-10. Able to develop algorithms and computer programs suitable for practical application	GPC-10.1. Knows the basics of algorithmization and the principles of building effective algorithms GPC-10.2. Can implement algorithms in one of the programming languages GPC-10.3. Owns methods of evaluating and optimizing code to solve practical problems
	Topic 2.4. Legal regulation of electronic document management. Current state of electronic document management.	Prepare for the test	GPC-1. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of mathematics, natural and technical sciences GPC-7. Able to understand the principles of modern information technology and use them to solve professional problems	GPC-1.3. Able to analyze the tasks of professional activity on the basis of provisions, laws and methods in the field of technical sciences GPC-7.2. Possesses the skills of working with specialized software; basic methods of automation for solving problems of professional activity

4.4. Guidelines for Organizing Student Self-Study

Self-study of students is carried out using e-learning and distance learning technologies. Educational and methodological materials for self-study are available to students through electronic library systems and the Hecadem Internet learning system, which presents materials of lectures and practical (seminar) classes, interactive forms of training, examples of tasks. The Hecadem Internet Learning System is a platform for distance learning and learning using digital technologies of the

Baikal International Business School of ISU. Each student receives authorized access to the system. Available at: <https://edu.buk.irk.ru>.

Self-study consists of:

- in the student's independent preparation for the lecture – reading the notes of the previous lecture, watching the video version of the lecture (if any). This helps to better understand the material of the new lecture, relying on previous knowledge;
- in preparation for practical classes on the main and additional sources of literature;
- in independent study of individual topics or questions in classes on the main and additional sources of literature, on sources on the Internet and on the electronic portal of the university;
- in preparation for current control and summative assessment.

When performing self-study in preparation for current control and summative assessment, the student must take into account the criteria for evaluating the task being performed (section 8 of this program).

Control over self-study is carried out when the student performs tasks from the fund of assessment materials of the discipline. In the course of self-study control, both the actual knowledge, skills and abilities of students are assessed, as well as the depth of understanding and the ability to isolate and interpret integral semantic structures, as well as the skills of independent search for the necessary information on the topic of the lesson and its critical assessment.

V. EDUCATIONAL, METHODOLOGICAL, AND INFORMATION SUPPORT FOR THE DISCIPLINE

a) List of references

1. Volk, V. K. Informatics: a textbook for universities / V. K. Volk. — Moscow : Yurayt Publishing House, 2022. — 207 p. — (Higher Education). — ISBN 978-5-534-14093-4. — Text : electronic // Educational platform Yurayt [site]. — URL: <https://urait.ru/bcode/496784>
2. Kozhevnikova, G. P. Information Systems and Technologies in Marketing: A Textbook for Higher Educational Institutions / G. P. Kozhevnikova, B. E. Odintsov. — Moscow : Yurayt Publishing House, 2022. — 444 p. — (Higher Education). — ISBN 978-5-534-07447-5. — Text : electronic // Educational platform Yurayt [site]. — URL: <https://urait.ru/bcode/489534>
3. Informatics for Economists. Practicum : Textbook for Higher Educational Institutions / V. I. Zavgorodniy [i dr.] ; pod redaktsiey V. I. Zavgorodniy. — 3rd ed., pererab. i dop. — Moscow : Yurayt Publishing House, 2022. — 298 p. — (Higher Education). — ISBN 978-5-534-11309-9. — Text : electronic // Educational platform Yurayt [site]. — URL: <https://urait.ru/bcode/488830>

We also recommend:

1. Informatics for Economists: A Textbook for Higher Educational Institutions / V. P. Polyakov [i dr.] ; edited by V. P. Polyakov. — Moscow : Yurayt Publishing House, 2022. — 524 p. — (Higher Education). — ISBN 978-5-534-11211-5. — Text : electronic // Educational platform Yurayt [site]. — URL: <https://urait.ru/bcode/488884>
2. Information Technologies : Textbook / St. Petersburg State University of Economics and Finance; ed. by V. V. Trofimov. - Moscow: Yurayt, 2011. - 624 p. - ISBN 9785991608879

b) Databases, reference and retrieval systems

1. ELS "Bibliotech". State Contract No. 019 dated 22.02.2011, LLC "Bibliotech". License Agreement No. 31 dated 22.02.2011. Access address: <https://isu.bibliotech.ru/> Validity period: from 22.11.2011, indefinite.
2. ELS "Rukont". Contract No. 98 dated 13.11.2020; Certificate No. bK-5415 dated 14.11.20. Validity period until 13.11.2021. Access: <http://rucont.ru/>
3. ELS "Lan Publishing House". LLC "Lan Publishing House". Information letter No. 128 dated 09.10.2017. Validity period: indefinite. Access address: <http://e.lanbook.com/>

4. ELS "National Digital Resource 'Rukont'". CCB "Bibkom". Contract No. 04-E-0343 dated 12.11.2021. Access address: <http://rucont.ru/>
5. ELS "Aibooks.ru/ibooks.ru". LLC "Aibooks". Contract No. 04-E-0344 dated 12.11.2021; Certificate dated 14.11.2021. Access address: <http://ibooks.ru>
6. Electronic Library System "ELS Urait". LLC "Urait Electronic Publishing House". Contract No. 04-E-0258 dated 20.09.2021. Access address: <https://urait.ru/>

VI. MATERIAL AND TECHNICAL SUPPORT FOR THE DISCIPLINE

6.1. Educational and Laboratory Equipment

Name of Specialized Premises and Self-Study Premises	Equipment of Specialized Premises and Self-Study Premises	List of Licensed Software. Details of Supporting Document
Lecture hall for lecture-type classes	<p>The hall is equipped with specialized (educational) furniture for 48 students and technical teaching aids for presenting educational information to a large audience. The demonstration equipment set includes:</p> <ol style="list-style-type: none"> 1. PC HP Elite 8300 SFF i5 3470/4Gb/1Tb/DVDRV/kb/m/DOS/Solenoid Lock and Hood Sensor (RUS) 2. Monitor Viewsonic TFT 20" VA2014WM glossy-black 5ms 20 00:1 250cd M/M 3. Projector Epson EB-1830 4. Active speakers Genius SP-S110 black 5. Video signal splitter Aten VS92A 2-port VGA <p>It is equipped with educational visual aids and electronic presentations that provide thematic illustrations for all topics specified in the discipline's syllabus.</p>	<p>BASE INSTALLATION KIT FOR: Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – contract with CJSC "Softline Trade" Tr026664 dated 17.05.2007 Project Standard 2007, Access 2007 - Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000023480 dated 19.05.2015 Windows operating systems under OEM pre-installation licensing programs, Microsoft MSDN AA academic collaboration programs. – contract with CJSC "Softline Trade" Tr017431 dated 15.05.2008 Windows operating systems under OEM pre-installation licensing programs, Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000031723 dated 05.08.2015 Antivirus software - Software rights for dr.Web Server Security comprehensive protection for 120 PCs (1 license per year) migration with additional purchase (LBW-BC-12M-120:119-C4) – contract with CJSC "Softline Trade" 13982/MOS2957 dated 22.01.2016 Archivers WinRAR: 3.x: Standard Licence - for legal entities, 100-199 licenses – contract with CJSC "Softline Trade" No. 15422/IRK11 dated 05.02.2010 Network client part: Software rights for Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL, 120 licenses – contract with CJSC "Softline Trade" 13512/MOS2957 dated 29.10.2015 Firewall, Proxy functionality - Software usage rights for Traffic Inspector GOLD discounted – contract with CJSC "Softline Trade" Tr044356 dated 27.08.2013 Software usage rights for Traffic Inspector GOLD Special renewal for 1 year – contract with CJSC "Softline Trade" Tr000112196 dated 29.09.2016</p>
Room for seminar-type classes	<p>The room is equipped with specialized (educational) furniture for 48 students and technical teaching aids for presenting educational information to a large audience. The demonstration equipment set includes:</p>	<p>BASE INSTALLATION KIT FOR: Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – contract with CJSC "Softline Trade" Tr026664 dated 17.05.2007 Project Standard 2007, Access 2007 - Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000023480 dated 19.05.2015 Windows operating systems under OEM pre-installation licensing programs, Microsoft MSDN AA academic collaboration programs. – contract with CJSC "Softline Trade" Tr017431 dated 15.05.2008</p>

	<p>1. HP Elite 8300 SFF PC (i5 3470/4GB/1TB/DVDRV /keyboard/mouse/DOS/S olenoid Lock and Hood Sensor (RUS))</p> <p>2. Viewsonic TFT 20" VA2014WM glossy-black monitor (5ms, 20:1 contrast ratio, 250 cd/m², M/M)</p> <p>3. Epson EB-1830 projector</p> <p>4. Genius SP-S110 black active speakers</p> <p>5. Aten VS92A 2-port VGA video signal splitter</p>	<p>Windows operating systems under OEM pre-installation licensing programs, Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000031723 dated 05.08.2015</p> <p>Antivirus software - Software rights for dr.Web Server Security comprehensive protection for 120 PCs (1 license per year) migration with additional purchase (LBW-BC-12M-120:119-C4) – contract with CJSC "Softline Trade" 13982/MOS2957 dated 22.01.2016</p> <p>Archivers WinRAR: 3.x: Standard Licence - for legal entities, 100-199 licenses – contract with CJSC "Softline Trade" No. 15422/IRK11 dated 05.02.2010</p> <p>Network client part: Software rights for Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL, 120 licenses – contract with CJSC "Softline Trade" 13512/MOS2957 dated 29.10.2015</p> <p>Firewall, Proxy functionality - Software usage rights for Traffic Inspector GOLD discounted – contract with CJSC "Softline Trade" Tr044356 dated 27.08.2013</p> <p>Software usage rights for Traffic Inspector GOLD Special renewal for 1 year – contract with CJSC "Softline Trade" Tr000112196 dated 29.09.2016</p>
<p>Hall for group and individual consultations, formative and summative assessment</p>	<p>The hall is equipped with specialized (educational) furniture for 11 students, 5 workstations equipped with computers connected to the Internet and providing access to the Electronic Information and Educational Environment (EIOS) of FSBEI HE "ISU".</p> <p>Equipment:</p> <p>1. 5 workstations: System unit HP Compaq dc7800SFF Dual Core PE-2180, 4 Gb DDR2 PC6400, 160GB SATA 3.0 HDD</p> <p>2. 17.0" ViewSonic "VA703m" LCD display, 1280x1024, 8ms, TCO'03, silver-black (D-Sub, MM)</p> <p>3. One Hewlett-Packard LaserJet 3055 All-in-One multifunction printer.</p>	<p>BASE INSTALLATION KIT FOR:</p> <p>Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – contract with CJSC "Softline Trade" Tr026664 dated 17.05.2007</p> <p>Project Standard 2007, Access 2007 - Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000023480 dated 19.05.2015</p> <p>Windows operating systems under OEM pre-installation licensing programs, Microsoft MSDN AA academic collaboration programs. – contract with CJSC "Softline Trade" Tr017431 dated 15.05.2008</p> <p>Windows operating systems under OEM pre-installation licensing programs, Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000031723 dated 05.08.2015</p> <p>Antivirus software - Software rights for dr.Web Server Security comprehensive protection for 120 PCs (1 license per year) migration with additional purchase (LBW-BC-12M-120:119-C4) – contract with CJSC "Softline Trade" 13982/MOS2957 dated 22.01.2016</p> <p>Archivers WinRAR: 3.x: Standard Licence - for legal entities, 100-199 licenses – contract with CJSC "Softline Trade" No. 15422/IRK11 dated 05.02.2010</p> <p>Network client part: Software rights for Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL, 120 licenses – contract with CJSC "Softline Trade" 13512/MOS2957 dated 29.10.2015</p> <p>Firewall, Proxy functionality - Software usage rights for Traffic Inspector GOLD discounted – contract with CJSC "Softline Trade" Tr044356 dated 27.08.2013</p> <p>Software usage rights for Traffic Inspector GOLD Special renewal for 1 year – contract with CJSC "Softline Trade" Tr000112196 dated 29.09.2016</p>
<p>Room for student self-study work</p>	<p>It is equipped with specialized (educational) furniture for 10 students and computer hardware connected to the Internet with access to the ISU Electronic Information</p>	<p>BASE INSTALLATION KIT FOR:</p> <p>Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – contract with CJSC "Softline Trade" Tr026664 dated 17.05.2007</p> <p>Project Standard 2007, Access 2007 - Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000023480 dated 19.05.2015</p>

	<p>and Educational Environment (EIOS).</p> <ol style="list-style-type: none"> 1. 10 units: ThinkCentre M80 Series SFF system unit kit: Intel® Core™ i3-540 Clarkdale 2.93GHz / 1333MHz / Dual Core™ / 4M/73W / LGA 1156/32nm / 4GB PC3-10600 SDRAM x 2 / 250 GB, 7200RPM SATA / DVD RW 2. 10 units: 20.0" ViewSonic "VA2013w" LCD monitor, 1600x900, 5ms, TCO 03, black (D-Sub) 3. HP LaserJet 5000N printer, A3, 22ppm, 32 MB, 250 & 500 sheet feeder, JetDirect 615n print server 4. HP LaserJet 5100th printer, A3, 22ppm, 32 MB, 250 & 500 sheet feeder, JetDirect 615n print server 	<p>Windows operating systems under OEM pre-installation licensing programs, Microsoft MSDN AA academic collaboration programs. – contract with CJSC "Softline Trade" Tr017431 dated 15.05.2008</p> <p>Windows operating systems under OEM pre-installation licensing programs, Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration programs. – contract with CJSC "Softline Trade" Tr000031723 dated 05.08.2015</p> <p>Antivirus software - Software rights for dr.Web Server Security comprehensive protection for 120 PCs (1 license per year) migration with additional purchase (LBW-BC-12M-120:119-C4) – contract with CJSC "Softline Trade" 13982/MOS2957 dated 22.01.2016</p> <p>Archivers WinRAR: 3.x: Standard Licence - for legal entities, 100-199 licenses – contract with CJSC "Softline Trade" No. 15422/IRK11 dated 05.02.2010</p> <p>Network client part: Software rights for Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL, 120 licenses – contract with CJSC "Softline Trade" 13512/MOS2957 dated 29.10.2015</p> <p>Firewall, Proxy functionality - Software usage rights for Traffic Inspector GOLD discounted – contract with CJSC "Softline Trade" Tr044356 dated 27.08.2013</p> <p>Software usage rights for Traffic Inspector GOLD Special renewal for 1 year – contract with CJSC "Softline Trade" Tr000112196 dated 29.09.2016</p>
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6.2. Software

The university is provided with the necessary set of licensed and freely distributed software, including domestic production:

1. Basic installation kit for: Office 2010 Services for granting the right to use the Microsoft Desktop Edu ALNG LicSAPk OLV E 1Y Acdmc Ent. program, 39 licenses for the ISU BMBSH. Contract No. 03-K-1131 dated November 29, 2021 KOSGU 226.4
2. Project Standard 2007, Access 2007 – ISU Azure Dev Tools for Teaching subscription (Visio, Project) 1 Year. Microsoft Corporation, One Microsoft Way, Redmond, WA 98052. Expiration Date March 31, 2023.
3. Microsoft Project Professional 2010, ISU Azure Dev Tools for Teaching subscription (Visio, Project) 1 Year. Microsoft Corporation, One Microsoft Way, Redmond, WA 98052. Expiration Date March 31, 2023.
4. Windows 7, Windows 10 operating systems – Services for granting the right to use the Microsoft Desktop Edu ALNG LicSAPk OLV E 1Y Acdmc Ent. program, 39 licenses for the ISU BMBSH. Contract No. 03-K-1131 dated November 29, 2021 KOSGU 226.4
5. Antivirus software - Dr.Web renewal Contract No. Tr000582689/03-E-0043 dated February 5, 2021, invoice No. Tr000582689 dated February 8, 2021
6. WinRAR archivers: 3.x: Standard Licence - for legal entities 100-199 licenses – Appendix No. 1 to contract No. 15422/IRK11 CJSC "Softline Trade" dated February 5, 2010
7. Network client part – Software rights for Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL 120 licenses - invoice Tr000051059 CJSC "Softline Trade" dated October 27, 2015
8. Firewall, Proxy functionality – Software usage rights for Traffic Inspector GOLD discounted invoice Tr005456 CJSC "Softline Trade" dated August 27, 2013

9. Traffic Inspector GOLD Special* for 5 years Contract RSZ-0000276 dated November 16, 2021 KOSGU 226.4 License renewal

6.3. Technical and Electronic Learning Tools

Multimedia Equipment and Other Technology for Presentation of Educational Material:

1. Desktop PC HP EliteDesk 800 G4 SFF Intel Core i5 8500 (3Ghz)/8192Mb/1000Gb/DVDrw/warranty 3y/W10Pro +V
2. ViewSonic 21.5" VA2245a monitor - LED [LED, 1920x1080, 10M:1, 5ms, 170° horizontal, 160° vertical, D-Sub]
3. NEC M420X LCD projector, 4200 ANSI Lumens, XGA, 2000:1 contrast, lamp 3500h (Eco mode), HDMI, USB Viewer, RJ-45, 10W, 3.6 kg
4. Jetbalance JB-115U 2.0 black speakers (4W)
5. Aten VS92A 2-port VGA video signal splitter

List of Licensed Software Used:

1. Office 2010 under the academic collaboration program with Russian Microsoft Desktop Education AllLng License/Software Assurance Pack Academic OLV 1License LevelE Enterprise.
2. Project Standard 2007, Access 2007 – under the Microsoft DreamSpark Premium Electronic Software Delivery academic collaboration program.
3. Microsoft Project Professional 2010, Microsoft Visio Professional 2010 under the Microsoft Imagine Standard Electronic Software Delivery academic collaboration program with the assistance of the ISU Computer Center (CNIT ISU).

VII. EDUCATIONAL TECHNOLOGIES

In accordance with the requirements of the Federal State Educational Standard in the field of training, the implementation of the competency-based approach provides for the widespread use of active and interactive forms of conducting classes in the educational process (computer simulations, business and role-playing games, analysis of specific situations) in combination with extracurricular work in order to form and develop the professional skills of students. The training course includes meetings with representatives of Russian companies, state and public organizations, master classes of experts and specialists.

Teaching the discipline involves the use of the following educational technologies:

- conducting classroom classes using multimedia technologies, audio and video materials;
- conducting lectures in the form of a problem lecture, lecture-discussion (if necessary, in the form of a webinar with a recording of the lecture for subsequent viewing);
- the use of a problem-oriented approach through self-study;
- test technologies on the remote platform "Hekadem";
- the use of interactive training technologies, such as group discussion, work in small groups;
- conducting master classes with specialists;
- performance of tests and self-study by students.

The share of classes conducted in interactive forms - practical classes - is determined by the main goal (mission) of the program, the characteristics of the contingent of students and the content of specific disciplines (determined by the requirements of the Federal State Educational Standard, taking into account the specifics of the CPEP). Lecture-type classes for the relevant groups of students are determined by the relevant working curriculum in accordance with the requirements of the Federal State Educational Standard.

VIII. MATERIALS FOR FORMATIVE AND SUMMATIVE ASSESSMENT

8.1. There are no evaluation materials for incoming control .

8.2. Assessment materials for formative and summative assessment

The purpose of assessment tools for current control and summative assessment is to identify the formation of competencies in accordance with the table below.

№	Type of control	Supervised topics (sections)	Controllable competencies indicators /
1	2	3	4
1.	Case Study	Topic 1.2 -1.4., 2.1. – 2.4.	PC-1.2; PP-7.3
2.	Test	Topic 1.1 -1.4., 2.1. – 2.4.	PC-1.2; PP-7.3
3.	Summative assessment - credit with grade, exam	Section 1, topics 1.1 – 1.4.	PC-1.2; PP-7.3
4.	Summative assessment - credit with grade, exam	Section 2, Topics 2.1 – 2.4.	PC-1.2; PP-7.3

8.3. Types of tools for formative and summative assessment

The list of assessment tools used to assess competencies at various stages of their formation, as well as a brief description of these tools, is given in the table

№	Name of assessment tool	Brief description of the assessment tool	Form of assessment tool
1.	Case Study	<p>A means of monitoring self-study or assimilation of the results of a practical lesson, which allows you to assess the student's ability to state the essence of the task, independently apply the standard methods of solving the problem studied within the discipline, and analyze the result of the work.</p> <p>It can be used to assess the skills, abilities and (or) experience of students' activities</p>	Case Study
2.	Test	<p>A system of standardized tasks that allows you to automate the procedure for measuring the level of knowledge and skills of a student. Performed by a student in the LMS "Hecadem"). The number of questions in the test is at least 20, the time for completion is not limited, the number of attempts is 1.</p> <p>It can be used to assess the knowledge and skills of students</p>	List of test tasks
3.	Credit (credit with grade), exam	<p>A means that allows you to assess the knowledge, skills, and (or) experience of a student's activities in a discipline.</p> <p>It can be used to assess the knowledge, skills, and (or) experience of students' activities</p>	List of theoretical questions and practical tasks for credit
4.	Exam	A means that allows you to assess the	List of theoretical

	<p>knowledge, skills, and (or) experience of a student's activities in a discipline.</p> <p>It can be used to assess the knowledge, skills, and (or) experience of students' activities</p>	<p>questions and practical tasks for the exam</p>
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8.4. Criteria for assessing the formation of competencies during formative and summative assessment

Case Study

Grading scale	Characteristics of the result (answer)	Level of competence development
86 – 100 points	The case problem was solved by the student in full in compliance with the necessary sequence of actions. The student worked completely independently; showed the theoretical knowledge, practical skills and abilities necessary for the work. The decision is drawn up neatly, without significant shortcomings.	High
70 – 85 points	The case problem was solved by the student in full and independently. Deviations from the necessary sequence of the solution are made, which do not affect the correctness of the final result. The solution shows the student's knowledge of the basic theoretical material and mastery of the skills necessary for independent performance of work. Inaccuracies and negligence in the design of the results of the work were committed.	Basic
61 - 70 points	The case problem is solved by the student with outside help. It takes a lot of time to prepare a solution. The student shows knowledge of theoretical material, but experiences difficulties in self-study with sources of knowledge.	Minimum
0 – 60 points	The case problem has not been solved by the student. The results obtained by the student do not allow to draw the right conclusions and completely diverge from the goal. Poor knowledge of theoretical material and lack of necessary skills are shown.	Competencies are not formed

Test

Grading scale	Characteristics of the result (answer)	Level of competence development
86 – 100 points	The share of correctly solved test tasks is 86 – 100% of the total volume of tasks in the test.	High
70 – 85 points	The share of correctly solved test tasks is 70 - 85% of the total volume of tasks in the test.	Basic
61 - 70 points	The share of correctly solved test tasks is 55 - 70% of the total volume of tasks in the test.	Minimum
0 – 60 points	The share of correctly solved test tasks is 0 – 54 of the total volume of tasks in the test.	Competencies are not formed

Summative assessment in the form of a credit with grade, an exam

Grading scales		Assessment criteria	Level development competencies
86 – 100 points (grade "excellent")	"Passed"	The student correctly answered the theoretical questions. Showed excellent knowledge within the framework of the educational material. Correctly completed practical tasks. Showed excellent skills and mastery of the skills gained in applying the acquired knowledge and skills in solving problems within the framework of the educational material. Answered all additional questions	High
70 – 85 points (grade "good")		The student answered theoretical questions with minor inaccuracies. Showed good knowledge within the framework of the educational material. With minor inaccuracies, he completed practical tasks. Showed good skills and mastery of the skills gained in applying the knowledge and skills gained in solving problems within the framework of the educational material. Answered most of the additional questions	Basic
61 - 70 points (grade "satisfactory")		The student answered theoretical questions with significant inaccuracies. Showed satisfactory knowledge within the framework of the educational material. With significant inaccuracies, he completed practical tasks. Showed satisfactory skills and skills in applying the acquired knowledge and skills in solving problems within the framework of the educational material. Made a lot of inaccuracies when answering additional questions	Minimum
0 – 60 points (grade "not satisfactory")	"Failed"	The student, when answering theoretical questions and performing practical tasks, demonstrated an insufficient level of knowledge and skills in solving problems within the framework of the educational material. When answering additional questions, many incorrect answers were made	Competencies are not formed

8.5. Description of the procedures for summative assessment of learning outcomes

When conducting summative assessment in the form of a test, the teacher can use the results of the current monitoring of progress during the semester and the results of testing on the materials studied during the semester. Assessment tools and standard control tasks used in the current control,

in conjunction with testing, allow you to assess the knowledge, skills and possession of skills/experience of students in the development of the discipline. In order to use the results of the current monitoring of progress, the teacher calculates the average assessment of the level of formation of the student's competencies (the sum of the grades received by the student is divided by the number of grades). The time of testing is announced to students in advance. Questions for testing are formed from a set of questions from all tests in this section. The number of questions in the test is at least 25, the time of completion is 45 minutes, the number of attempts is two.

Summative assessment in the form of an exam (test) is carried out by means of an oral interview on tickets. The tickets were designed in such a way that each of them included theoretical questions and practical tasks.

The ticket contains a theoretical question and a practical task for assessing skills and (or) work experience (selected from the list of theoretical questions of standard practical tasks for the exam (test)).

At the exam (test), the student takes a ticket, and the student is given time within 45 minutes to prepare an answer to the exam ticket. In the process of answering the student's questions and tasks on the ticket, the teacher may ask additional questions.

Each question/task of the ticket is evaluated according to the hundred-point system, and then the arithmetic mean of the marks received for each question/task is calculated. The arithmetic mean of the grades is rounded to an integer according to the rounding rules.

8.6. Demonstration versions of assessment tools of formative assessment

№	Name of assessment tool	Sample of assessment tool
1.	Case Study	<p>Select and systematize data from the attached set for building charts, build diagrams reflecting the average selling price for each product for the 1st quarter of 2025, the dynamics of changes in profit from the sale of two different items for the year, comparison of changes in the total profit from sales as a percentage of all goods at a given dealer for the entire period, the distribution of sales shares for all products in total for each dealer for the 2nd quarter of the year.</p>
2.	List of test tasks	<p> The TCP/IP protocol stack is designed to (choose the right option) <input type="checkbox"/> to transmit data over the network <input type="checkbox"/> , convert data into a text-based representation of <input type="checkbox"/> knowledge as data</p> <p> Is it true that local networks use the same data transfer protocols as the Internet? <input type="checkbox"/> False <input type="checkbox"/> True</p> <p> Determine the correct sequence of URL elements <input type="checkbox"/> first protocol, then identifier, <input type="checkbox"/> first identifier, then protocol</p> <p> Check all true statements: <input type="checkbox"/> bits less than a byte, <input type="checkbox"/> bytes more than a kilobyte, <input type="checkbox"/> kilobyte less than a megabyte</p> <p> Is it true that an Internet connection is required for the operating system to work correctly? <input type="checkbox"/> False <input type="checkbox"/> True</p> <p> For computer processing, the data must be represented in the form of (mark the correct option) <input type="checkbox"/> binary numbers, <input type="checkbox"/> prime numbers <input type="checkbox"/> , complex numbers</p> <p> Client-server architecture is most inherent <input type="checkbox"/> in application</p>

		<p>programs, utilities, operating systems</p> <p>To convert the symbols of national alphabets into numerical representation, encoding tables, clustering tools, localization algorithms are used (mark the correct option)</p> <p>Data transmission over the network (mark the correct option) distributes information in time, distributes information in space</p> <p>Specify the corporate domain, Internet address edu.buk.irk.ru edu buk irk ru</p> <p>The IP protocol is designed to (determine the correct option) split files into packets to route signaling packets</p> <p>Representation of resources on the Internet is possible only with the use of a regional domain incorrectly</p> <p>For data routing on the Internet, the IP, HTTP, DHCP protocol is used</p> <p>The primary address of the device on the Internet is numeric text</p> <p>The Internet is (choose the most correct option) the unification of networks, a single network, a single network</p> <p>VPNs involve deploying a physical network for private purposes, deploying a logical network for private purposes, and using someone else's local network for private purposes</p> <p>The HTTP protocol can be used to (check all valid options) to manage the Hypertext Transfer File Transfer OS</p> <p>Network protocols define (check all the correct options) the rules for transferring data over the network, the rules for converting data into signals, the rules for reading and writing data</p> <p>A named data set is (mark the correct option) a file cluster processor</p> <p>Displaying the results of the application program (select the correct option), client function, server function</p> <p>Binary coding involves the representation of information in the form of zeros, zeros, zeros, zeros and decimal numbers</p>
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8.7. List of theoretical questions and practical tasks for summative assessment

Sample theoretical questions

1. Information Forms of its presentation. Examples.
2. Information. The concept of the amount of information. Examples.
3. History and current state of information technology.
4. Prospects for the development of information technologies.

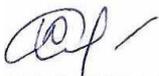
5. Computer architecture. Basic computer components and their functions.
6. Processor. Command system.
7. The principle of computer program control.
8. Computer RAM. Structure of memory.
9. Formats for representing integers in RAM.
10. Formats for representing real numbers in RAM.
11. Formats for presenting text in RAM.
12. In-memory audio representation formats.
13. In-memory image formats.
14. Computer interrupt system.
15. Interrupt handling on the computer.
16. External memory devices. Purpose and characteristics.
17. Types of external memory devices and their characteristics.
18. Organization of data storage on external memory volumes.
19. The file system of the computer.
20. Input devices. Purpose and characteristics. Examples.
21. Output devices. Purpose and characteristics. Examples.
22. Computer performance. Selection and justification of the optimal configuration on the example of a specific area of use
 1. Software. Purpose and composition.
 2. Operating systems. Purpose, functions. Types of fixed assets.
 3. Task Management in Windows Sample.
 4. Controlling access to the processor in multitasking operating systems.
 5. RAM management in multitasking OS.
 6. Control access to exclusive resources: files and external devices in multitasking operating systems.
 7. OS interface with the user. Example of WINDOWS.
 8. Working with files in WINDOWS.
 9. Protect your information on your computer. Means of ensuring the safety of data.
 10. Text editors. Overview and comparative characteristics.
 11. Text formatting and formatting tools in the MS WORD editor. Examples
 12. Graphics and formats of its presentation. Work with graphics in different formats. Examples.
 13. Graphic editors. Purpose and opportunities. Examples.
 14. Preparation of presentations. Opportunities and means. Examples.
 15. Data structure in Excel. Types of data in a table. Examples.
 16. Enter and edit data in Excel spreadsheets. Examples.
 17. Calculations in Excel spreadsheets. Formulas, functions. Examples.
 18. Layout of tables in Excel. Examples.
 19. Visualize data in Excel. Graphs and diagrams. Examples.
 20. Forecast in the calculation model. Scenarios in Excel. Examples.
 21. Selection of control parameters and search for a solution in the calculation model. Examples.
 22. Macros and their use in Excel. Examples.

Examples of practical tasks.

1. Select and systematize data from the attached set for building a chart, build a chart reflecting the average selling price for each product for the 1st quarter of 2021.
2. Display in the 1C information base the documents corresponding to cash settlements of Romashka LLC with employee G.N. Abramov. for the 1st quarter of 2021, show the movements for each document.
3. Make up the text according to the specified requirements:
 - orientation - portrait;

- text margins - 20 mm on all sides;
- font - Times New Roman (Cyr);
- font size - 12;
- line spacing - single;
- paragraph indent - 5 mm.

Developer:



Senior Lecturer Yudalevich N.V.

signature (position held) (full name)

The program is compiled in accordance with the requirements of the Federal State Educational Standards of Higher Education in the direction of training 27.03.05 Innovation, the training profile "Management of innovative and IT projects and products".

The program was considered at a meeting of the Strategic and Financial Management Department on March 21, 2025, Minutes No 9.

Head of the Department



N.B. Grosheva

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