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MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

"Moscow Polytechnic University"

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"16" 02 2023

WORKING PROGRAM OF THE DISCIPLINE

"Digitalization of management processes"

Field of study
38.03.02 Management

Educational program (profile)
"Business Process Management"

Qualification (degree)
Bachelor

Form of study
Half-time

Moscow 2023

Developer(s):

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Agreed:

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1. Goals, objectives and planned learning outcomes in the discipline

The main goals of mastering the discipline "Digitalization of management processes" include:

– formation of knowledge about modern principles, methods and means of modern information technologies in relation to management, methods and means of their application in business;

- preparing students for activities in accordance with the qualification characteristics of a bachelor in the direction, including the formation of skills to identify the necessary improvements in the organization; ensuring the use of information technologies to improve the efficiency of professional activities.

The main tasks of mastering the discipline "Digitalization of management processes" include:

– mastering the methodology, analysis and selection of information technologies for application in the conditions of professional activity in the organization. mastering the methods and conditions for using information technologies, choosing evaluation criteria, quality indicators, determining the parameters to be checked, the procedure for determining and processing the information received and its protection.

Training in the discipline "Digitalization of management processes" is aimed at developing the following competencies among students:

Code and name of competencies	Competence achievement indicators
OPK - 5. Able to use modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis	IOPK-5.1. Knows modern methods of using information technologies and software, including the management of large data sets and their intellectual analysis. IOPK-5.2. Able to use modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis. IOPK-5.3. He has the skills to use modern information technologies and

	software tools in solving professional problems, including the management of large data arrays and their intellectual analysis.
OPK - 6. Able to understand the principles of modern information technologies and use them to solve the problems of professional activity	IOPK-6.1. Knows the principles of operation of modern information technologies and the methodology of their use to solve the problems of professional activity. IOPK-6.2. Able to apply the principles of modern information technology to solve problems of professional activity. IOPK-6.3. Has the skills to use modern information technologies to solve the problems of professional activity.

2. The place of discipline in the structure of the educational program

Discipline "Digitalization of management processes" refers to the number of academic disciplines of the part formed by the participants of educational technologies (B1.2.03) of the bachelor's educational program.

The discipline "Digitalization of management processes" is interconnected logically and content-methodically with the following disciplines and practices of the EP:

- "Digital Literacy";
- "Technologies for organizing managerial interaction";
- "Process management";
- "Business process management tools";
- "Fundamentals of Technological Entrepreneurship".

3. Structure and content of the discipline

The total complexity of the discipline is:

half-time form - 4 credit units, i.e. 144 academic hours (of which 126 hours are students' independent work).

Second term:

half-time: lectures - 8 hours, practical classes - 10 hours, form of control - exam.

3.1 Types of educational work and labor intensity

3.1.1. Half-time education

o. p / p	Type of study work	Number of hours	Semesters	
	Auditory lessons	**36**		36
	Including:			
.1	Lectures	18		18
.2	Seminars/practical classes	18		18
.3	Laboratory studies			
	Independent work	**108**		108
	Including:			
	Intermediate certification			
	exam			
	Total	**144**		

3.2 Thematic plan for studying the discipline

3.2.1. Half-time education

No. p/p	Sections/topics disciplines	Labor intensity, hour					
		Total	Classroom work				Independent work
			Lectures	Seminar / practical training	Laboratory studies	Practical training	
1.1	The history of the development of computers		1	1			6
1.2	Corporate use of computers and computer networks.		1	1			6
2.1	Personal computer in a corporate environment		1	1			6
2.2	Principles of operation and types of PC elements		1	1			6

3.1	Principles of development and management of a corporate digital product		1	1			6
3.2	Types of programming languages		1	1			6
4.1	Text Information Processing Technology		1	1			6
4.2	Typography Basics		1	1			6
5.1	Graphics processing technologies		1	1			6
5.2	Raster and vector graphics editors		1	1			6
6.1	Spreadsheets		1	1			6
6.2	Excel Functions		1	1			6
7.1	Electronic presentation tools		1	1			6
7.2	Basic Power Point Properties		1	1			6
8.1	Database technologies		1	1			6
8.2	Working with MS Access DBMS		1	1			6
9.1	Local and global computer networks		1	1			6
9.2	. Global network Internet.		1	1			6
Total			**18**	**18**			**108**

3.3 The content of the discipline

Topic 1. The history of the development of computers.

The concept of "computer". The first computers. Alan Turing is the creator of the first computer. General purpose computer model Encryption systems. The evolution of Windows. Corporate use of computers and computer networks.

Topic 2. Personal computer in a corporate environment.

Form factors of modern computers (computers). Office PC configuration. The main elements and their characteristics of a modern PC. Principles of operation and types of PC elements. Data input/output devices used in business networks.

Topic 3. Principles of development and management of a corporate digital product.

Stages of digital product development. Types of programming languages. Data typing. Declarative and imperative programming languages. programming paradigms. Procedural and Object-Oriented Languages. VBA programming language.

Topic 4. Text information processing technology

Working with text in Microsoft Word. An extended set of typical operations, including contextual search and replace, save operations, spelling and syntax checking, synonym dictionary, setting general page settings, autotext, using templates, macros, merging documents. Fundamentals of typography. GOST R 7.0.97-2016. Working with tables. Formation of hyperlinks. Creation of document content. Formation and work with document sections. Style template.

Topic 5. Technologies for processing graphic information

The concept of computer graphics. Raster and vector graphic editors. Fundamentals of artistic design of advertising products. Graphics in texts. Fundamentals of color and composition in a corporate environment. State-of-the-art graphics creation software. Image processing. Features of the output of graphic images for printing.

Topic 6. Spreadsheets

Spreadsheet Microsoft Excel. Program interface. Operations with workbooks and sheets. Basic formulas for the analysis of quantitative indicators of the organization. Excel functions. Construction of graphs and diagrams. Sorting and selection of data.

Topic 7. Means of electronic presentations

Microsoft Power Point Presentation as a means of presenting ideas. Basic properties of Power Point. Development of presentations. Control playback of presentations.

Topic 8. Database technologies.

Database management systems. Microsoft Access The concept of information support. Definitions of a database (DB), a database management system (DBMS), a

databank. Data organization models: hierarchical, network, relational. DB classification. Architectures of centralized database systems with network access: file-server, client-server. Relational database design. Generalized technology of user work in DBMS. Working with Access DBMS. Table structure and data types. Organization of data in relational databases. Data integrity. Creating inter-table links. Entering, editing, sorting, filtering data. Printout. Creation of forms, requests, reports. Automation of work with a DB by means of VBA. Structured query language SQL.

Topic 9. Local and global computer networks

Network technologies for data processing. Fundamentals of computer communication. Principles of organization and basic topologies of computer networks. Network service and network standards. Global network Internet. The structure of the Internet. Ways of transferring information to the Internet (protocols, services). Services provided by the Internet (search engines, file servers, news servers, information channels). Internet connection. Programs for sending and receiving e-mail. Creating an email.

3.4 Topics of seminars / practical and laboratory classes

1. Solving logic problems
2. Make a schedule and describe the route scheme
3. Compose a memo
4. Map Digital Enterprise Product Development in Word
5. Creating sheets in MS WORD
6. Format text with according to GOST R 7.0.97-2016
7. Create a flyer in Word
8. Create an information poster for your study group.
9. Creating a graphic product card for an online store.
10. Analysis of data on the organization, calculation of profit and profitability of sales. Building a sales schedule.
11. Create a table and chart from payroll data

12. self-presentation

13. Create a creative title slide for your presentation.

14. Creating an electronics store database in MS Access DBMS

15. Creating a sales registration database

16. Analysis of information from search engines

17. Create a presentation on network topologies

3.5 Topics of course projects (term papers)

1. The impact of digitalization on the effectiveness of management processes in an organization.

2. Application of digital technologies in human resource management.

3. Cybersecurity in the context of digitalization of management processes.

4. Optimization of the process of making managerial decisions when using digital tools.

5. Implementation and use of artificial intelligence in the digitalization of management processes.

6. Analysis and management of big data in the context of digitalization of management processes.

7. Advantages and disadvantages of automation of management processes in the digital environment.

8. Modern methods of data visualization in the digitalization of management processes.

9. The role of mobile applications in the digital transformation of management processes.

10. Digitalization of financial management in the organization.

11. The process of modernization of management processes under the influence of digital technologies.

12. The impact of digitalization on project management in the organization.

13. Optimization of logistics processes using digital tools.

14. Integration of digital management systems into the business processes of the organization.

15. Automation of marketing processes in the context of digital transformation.

16. Digitalization of risk management in the organization.

17. Principles and methods of digital forecasting in management processes.

18. Use of digital technologies in customer relationship management.

19. The role of digitalization in managing the quality of products and services.

20. Adaptation of digital tools to the specifics of management processes in various industries.

21. The impact of digitalization on the processes of operational management in the organization.

22. Role-playing game of digital technologies in strategic management.

23. Digital transformation of management processes in the public sector.

24. Benefits and challenges of digitalization in supply chain management.

25. Use of digital platforms and ecosystems in management processes.

26. Integration of digital tools into innovation management processes.

27. Introduction of digital technologies in crisis management.

28. Modeling and optimization of business processes using digital tools.

29. Digital transformation of corporate culture in personnel management.

30. Use of digital technologies in organizational change management.

31. Automation of organization resource management processes in the context of digital transformation.

32. Digitalization of the process of managing production operations.

33. The role of digital technologies in the management of intellectual property.

34. Introduction of digital tools in the management of quality standards.

35. Use of digital tools in managing the pricing policy of an organization.

36. Digital transformation of sales and customer service management.

37. Innovative management models in the context of digital technologies.

38. Digitalization of management of public relations and reputation of the organization.

39. Processes of digital coaching and mentoring in management processes.

40. Implementation of blockchain technologies in management processes.

4. Educational, methodological and information support

4.1 Regulatory documents and GOSTs

4.2 Main literature

1. Galiyeva N. V. Information technologies in management: textbook - M.: MISIS, 2020. - 172 p. - ISBN 978-5-907226-81-4. — Text: electronic // Doe: electronic library system. - url:https://e.lanbook.com/book/147972
2. Brozgunova N. P. Information technologies for project management: textbook - Voronezh: Michurinsky State Agrarian University, 2021. - 79 p. — ISBN 978-5-94664-445-7. — Text: electronic // Doe: electronic library system. - url:https://e.lanbook.com/book/202019

4.3 Additional literature

1. Chaika, A. M., Bradul N.V., Bradul S.V. Information technologies in anti-crisis management: textbook / - D .: DONAUIGS, 2021. - 208 p. — Text: electronic // Doe: electronic library system. - url:https://e.lanbook.com/book/225800
2. Provalov V. S. Information technologies of management: textbook - 4th ed., Sr. — M.: FLINTA, 2018. — 373 p. - ISBN 978-5-9765-0269-7. — Text: electronic // Doe: electronic library system. - url:https://e.lanbook.com/book/109575

4.4 Electronic educational resources

Electronic educational resource for the discipline is being developed.

4.5 Licensed and Free Software

Office applications, Microsoft Office 2013 (or lower) - Microsoft Open License. License No. 61984042

4.6 Modern professional databases and information reference systems

Office Applications, Microsoft Office 2013 (or lower) -Microsoft Open License - License No. 61984042 Agreement No. 08-05/13 of 06/03/2013 Acceptance and transfer certificate No. 961, Transfer and acceptance certificate No. 385

Operating system, Windows 7 (or lower) - Microsoft Open License – License No. 61984214, 61984216, 61984217, 61984219, 61984213, 61984218, 61984215; 961

5. Logistics

Audiences for lectures and seminars of the general fund: study tables with benches, classroom board, portable multimedia complex (projector, projection screen, laptop). Teacher's workplace: table, chair.

Office applications, Microsoft Office 2013 (or lower) -Microsoft Open License - License No. 61984042 Agreement No. 08-05/13 dated 06/03/2013 Transfer and Acceptance Certificate No. 961, Transfer and Acceptance Certificate No. 385

Operating system, Windows 7 (or lower) - Microsoft Open License – License No. 61984214, 61984216, 61984217, 61984219, 61984213, 61984218, 61984215; 961

6. Guidelines

6.1 Methodological recommendations for the teacher on the organization of training

A presentation (from the English word - presentation) is a set of color slide pictures on a specific topic, which is stored in a special format file with the PP extension. The term "presentation" (sometimes called "slide film") is associated primarily with the information and advertising functions of pictures that are designed for a certain category of viewers (users).

Multimedia computer presentation is:

- dynamic synthesis of text, image, sound;
- interactive contact of the speaker with the demonstration material;
- mobility and compactness of information carriers and equipment;
- ability to update, supplement and adapt information;

Rules for the design of computer presentations

General Design Rules

Many designers argue that there are no laws and rules in design. There are tips, tricks, tips. Design, like any kind of creativity, art, like any way of some people to communicate with others, like language, like thought, will bypass any rules and laws.

Font design rules:

- Serif fonts are easier to read than sans-serif fonts;
- Capital letters are not recommended for body text.
- Font contrast can be created through: font size, font weight, style, shape, direction, and color.
- Rules for choosing colors.
- The color scheme should consist of no more than two or three colors.
- There are incompatible color combinations.
- Black color has a negative (gloomy) connotation.
- White text on a black background is hard to read (inversion is hard to read).

Presentation design guidelines

In order for the presentation to be well perceived by the audience and not cause negative emotions (subconscious or completely conscious), it is necessary to follow the rules for its design.

The presentation involves a combination of information of various types: text, graphics, musical and sound effects, animation and video clips. Therefore, it is necessary to take into account the specifics of combining fragments of information of various types. In addition, the design and demonstration of each of the listed types of information is also subject to certain rules. So, for example, for textual information, the choice of font is important, for graphic information - brightness and color saturation, for their best joint perception, optimal relative position on the slide is necessary.

Consider recommendations for the design and presentation of various types of materials on the screen.

Formatting text information:

- font size: 24–54 pt (headline), 18–36 pt;
- font color and background color should contrast (the text should be well read), but not hurt the eyes;
- font type: smooth sans-serif for body text (Arial, Tahoma, Verdana),

- italics, underlining, bold, capital letters are recommended to be used only for semantic highlighting of a text fragment.

Formatting graphic information:

- drawings, photographs, diagrams are designed to supplement textual information or convey it in a more visual form;
- it is desirable to avoid drawings in the presentation that do not carry a semantic load if they are not part of the style design;
- the color of graphic images should not contrast sharply with the overall style of the slide;
- illustrations are recommended to be accompanied by explanatory text;
- if a graphic image is used as a background, then the text on this background should be well readable.

The content and location of information blocks on the slide:

- there should not be too many information blocks (3-6);
- the recommended size of one information block is no more than 1/2 of the slide size;
- it is desirable to have on the page blocks with different types of information (text, graphs, diagrams, tables, figures) that complement each other;
- keywords in the information block must be highlighted;
- information blocks should be placed horizontally, blocks related in meaning - from left to right;
- the most important information should be placed in the center of the slide;
- the logic of presenting information on slides and in the presentation should correspond to the logic of its presentation.

In addition to the correct arrangement of text blocks, one must not forget about their content - the text. In no case should it contain spelling errors. You should also take into account the general rules for formatting the text.

After creating a presentation and its design, you need to rehearse its presentation and your performance, check how the presentation will look like as a

whole (on a computer screen or projection screen), how quickly and adequately it is perceived from different audience locations, under different lighting conditions, noise accompaniment, in an environment as close as possible to the real conditions of the performance.

6.2 Guidelines for students on mastering the discipline

Lecture - a systematic, consistent, monologue presentation by the teacher of educational material, as a rule, of a theoretical nature. When preparing a lecture, the teacher is guided by the working program of the discipline. In the course of lectures, it is recommended to keep a summary, which will later allow you to recall the studied educational material, to supplement the content during independent work with literature.

You should also pay attention to categories, formulations that reveal the content of certain phenomena and processes, scientific conclusions and practical recommendations, positive experience in oratory. It is advisable to leave fields in the working notes on which to make notes from the recommended literature, supplementing the material of the lecture heard, as well as emphasizing the particular importance of certain theoretical positions.

Lecture conclusions summarize the teacher's reflections on educational issues. The teacher provides a list of used and recommended sources for studying a particular topic. At the end of the lecture, students have the opportunity to ask questions to the teacher on the topic of the lecture. When lecturing on the discipline, electronic multimedia presentations can be used.

Guidelines for students when working at the seminar

Seminars are implemented in accordance with the working curriculum with consistent study of the topics of the discipline. In preparation for the seminars, the student is recommended to study the basic literature, get acquainted with additional literature, new publications in periodicals: magazines, newspapers, etc. In this case, the recommendations of the teacher and the requirements of the curriculum should be

taken into account. It is also recommended to refine your lecture notes by making appropriate entries in it from the literature recommended by the teacher and provided by the curriculum. Abstracts should be prepared for presentations on all educational issues submitted to the seminar.

Since the student's activity in seminars is the subject of monitoring his progress in mastering the course, preparation for seminars requires a responsible attitude. In interactive classes, students should be active.

Guidelines for students on the organization of independent work

Independent work of students is aimed at independent study of a separate topic of the academic discipline. Independent work is mandatory for each student, its volume is determined by the curriculum. During independent work, the student interacts with the recommended materials with the participation of the teacher in the form of consultations. The electronic library system (electronic library) of the university provides the possibility of individual access for each student from any point where there is access to the Internet.

If there are students from among persons with disabilities, they will be provided with printed and (or) electronic educational resources in forms adapted to their disabilities.

7. Evaluation fund

7.1 Methods for monitoring and evaluating learning outcomes

OS number	Name of the evaluation tool	Brief description of the evaluation tool	Presentation of the evaluation tool in the FOS
2	Oral interview interview, (UO)	A means of control, organized as a special conversation between a teacher and a student on topics related to the discipline being studied, and designed to clarify the amount of knowledge of the student in a particular section, topic, problem, etc.	Questions about topics / sections of the discipline
2	Test (T)	A system of standardized tasks that allows you to automate the procedure for measuring the level of knowledge and skills of a student.	Fund of test tasks

3	Exam	The final form of knowledge assessment. In higher education institutions are held during examination sessions.	Questions for the exam

7.2 Scale and criteria for evaluating learning outcomes

An indicator of competency assessment at various stages of their formation is the achievement by students of the planned learning outcomes in the discipline (module).

OPK-5 The ability to use modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis.				
Index	**Evaluation criteria**			
	2	**3**	**4**	**5**
know: modern methods of using information technologies and software, including the management of large data arrays and their intellectual analysis.	The student demonstrates the complete absence or insufficient compliance of the following knowledge: modern methods of using information technologies and software, including the management of large data sets and their intellectual analysis.	The student demonstrates incomplete compliance with the following knowledge: modern methods of using information technology and software, including the management of large data sets and their intellectual analysis. Significant mistakes are made, lack of knowledge is manifested, for a number of indicators, the student experiences significant difficulties in operating knowledge when transferring it to new situations.	The student demonstrates partial compliance with the following knowledge: modern methods of using information technology and software, including the management of large data sets and their intellectual analysis, but minor errors, inaccuracies, difficulties in analytical operations are allowed.	The student demonstrates full compliance with the following knowledge: modern methods of using information technology and software, including the management of large data sets and their intellectual analysis, freely operates with the acquired knowledge.
be able to: solve standard tasks of professional activity and apply information and	The student is not able or insufficiently able to solve standard tasks of professional activity and apply	The student demonstrates incomplete compliance with the following skills: solve standard tasks	The student demonstrates partial compliance with the following skills: solve standard tasks of professional	The student demonstrates full compliance with the following skills: solve standard

communication technologies	information and communication technologies	of professional activity and apply information and communication technologies. Significant mistakes are made, lack of skills is manifested, for a number of indicators, the student experiences significant difficulties in operating with skills when transferring them to new situations.	activity and apply information and communication technologies. Skills are mastered, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are allowed.	tasks of professional activity, apply information and communication technologies Freely operates with acquired skills, applies them in situations of increased complexity.
own: the skills of using modern information technologies and software tools in solving professional problems, including the management of large data arrays and their intellectual analysis.	The student does not possess or insufficiently possesses the skills to use modern information technologies and software tools in solving professional problems, including the management of large data arrays and their intellectual analysis.	The student has the skills to use modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis, significant mistakes are made, there is a lack of skills in a number of indicators, the student experiences significant difficulties in applying skills in new situations.	The student partially possesses the skills of using modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are allowed.	The student fully owns the skills of using modern information technologies and software in solving professional problems, including the management of large data arrays and their intellectual analysis, freely applies the acquired skills in situations of increased complexity.
OPK - 6. Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity				
IOPK-6.1. Knows the principles of operation of modern information technologies and the methodology of their use to solve the problems of	The student demonstrates the complete absence or insufficient compliance of the following knowledge: the principles of operation of modern information technologies and the	The student demonstrates incomplete compliance with the following knowledge: the principles of operation of modern information technologies and the methodology of their	The student demonstrates partial compliance with the following knowledge: the principles of operation of modern information technologies and the methodology for their use to solve the	The student demonstrates full compliance with the following knowledge: the principles of operation of modern information technologies

professional activity.	methodology of their use to solve the problems of professional activity.	use to solve the problems of professional activity. Significant mistakes are made, lack of knowledge is manifested, for a number of indicators, the student experiences significant difficulties in operating knowledge when transferring it to new situations.	problems of professional activity, but minor errors, inaccuracies, difficulties in analytical operations are allowed.	and the methodology of their use to solve the problems of professional activity, freely operates with the acquired knowledge.
IOPC-6.2. Able to apply the principles of modern information technology to solve problems of professional activity.	The student does not know how or insufficiently knows how to apply the principles of the work of modern information technologies to solve the problems of professional activity	The student demonstrates incomplete compliance with the following skills: apply the principles of modern information technology to solve the problems of professional activity. Significant mistakes are made, lack of skills is manifested, for a number of indicators, the student experiences significant difficulties in operating with skills when transferring them to new situations.	The student demonstrates partial compliance with the following skills: apply the principles of modern information technology to solve the problems of professional activity. Skills are mastered, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are allowed.	The student demonstrates full compliance with the following skills: apply the principles of modern information technology to solve the problems of professional activity. Freely operates with acquired skills, applies them in situations of increased complexity.
IOPC-6.3. Has the skills to use modern information technologies to solve the problems of professional activity.	The student does not possess or insufficiently possesses the skills to use modern information technologies to solve the problems of professional activity.	The student has the skills to use modern information technologies to solve the problems of professional activity, significant mistakes are made, there is a lack of skills in a number of indicators, the student experiences significant difficulties in applying skills in	The student partially owns the skills of using modern information technologies to solve problems of professional activity, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are	The student is fully proficient in the use of modern information technologies to solve the problems of professional activity, freely applies the acquired skills in situations of increased complexity.

		new situations.	allowed.	

7.3 Evaluation tools

7.3.1 Questions for preparing for the exam in the discipline "Digitalization of management processes" formation of the competence of OPK-5, OPK-6

1. What is the essence of information management and what is the place of an IT manager in IP management?
2. What is an information system?
3. What are the functions of an IT manager at a consumer firm and an IP manufacturing firm?
4. What are the features of information process management?
5. What are the features of managing the processes of creating new knowledge?
6. What are the features of creative potential management?
7. What are the features of innovation management?
8. What are the features of managing the social and psychological aspects of innovation?
9. What is the decision maker's information environment?
10. What is an instrumental environment?
11. What is corporate information resources?
12. What is the organizational structure?
13. What is a technological environment?
14. What is the place of corporate information resources in the structure of FIT?
15. What is the mutual influence of PT and FIT?
16. What is the relationship of FIT with the business process?
17. What are the methods for distributing FIT between participants in a business process?
18. What is IP risk?
19. What is the place of IT risk among management risks?
20. How are IP risks classified and what are the methods of their regulation?

21. What risks exist at various stages of their IP life cycle? 22. How to assess the risk of purchasing, implementing and operating IS?

23. What are MRP, MRPII, ERP, APS, PDM, CRM, SCM, PLM systems?

24. What are the functionality and structure of information systems (MRP; MRPII; ERP; APS; e-commerce systems)?

25. What are the features, positive and negative aspects of the implementation of MRPII; ERP systems?

26. What is TPS; MIS; EPSS; IPSS; EIS; GPSS; DSS - systems?

27. What are the functionality and structure of information systems DSS; EPSS)?

28. What are the features, positive and negative aspects of the implementation of DSS systems?

29. What is a custom, unique, replicated IP?

30. What is a transformer system (constructor system)?

31. What is IP adaptation?

32. What is adaptable IC?

33. What are the ways to acquire IP?

34. What are the advantages and disadvantages of buying IP?

35. What are the advantages and disadvantages of developing IS by an IS developer?

36. What are the advantages and disadvantages of developing IP on your own?

37. What are the advantages and disadvantages of buying and upgrading IP?

38. What are the advantages and disadvantages of custom, unique and replicated information systems?

39. What are the advantages and disadvantages of domestic and foreign information systems?

40. What is outsourcing?

41. What is ASP (Arplications Service Providing)?

42. What are the advantages and disadvantages of outsourcing?

43. What components does the purchase price of IP include?

44. What are the components of the total cost of IP ownership?

45. What stages of the IP life cycle affect the price of IP ownership?

46. What is ABC (Activity Based Costing)?

47. What determines the quality of IP?

48. What are the general requirements for IP?

49. What is TQM (Total Quality Management)?

50. What is CMM (Sarabilitu Maturitu Model)?

51. What is the IP life cycle?

52. What are the IP life cycle models?

53. What are the features of the cascade, phased and spiral model of the IP life cycle?

54. What are the stages of the IP life cycle?

55. What are the features of IP management at various stages of their life cycle?

Fund of test tasks

Job number	Content of the question	Correct answer	The name of the discipline that forms the competence
1.	DBMS is A) Data security management system B) The system of unification of the base depository C) Database management system D) Big data deletion system	IN	Digitalization of management processes
2.	Databases based on the theory of relations and storing data in tables consisting of rows and columns are called: A) Hierarchical databases B) Spatial databases C) Object-oriented databases D) Relational databases	G	
.	A data organization model in which data is organized in the form of several nested lists and relationships between them is called: A) Hierarchical model B) Network model IN) relational model G) Graph model	B	
.	The database management system that allows you to create and manage databases, included in the Microsoft office package is called:	B	

	A) Microsoft Publisher B) Microsoft Access IN) Microsoft Outlook G) Microsoft Excel		
.	The databases used to process transactions and basic business operations are called: A) Analytical databases B) Operational databases C) Management databases D) Financial databases	B	
.	The process of creating a data structure in the form of tables and relationships, in which each table is a specific object is called: A) Relational database design B) Designing an object-oriented database C) Designing a Graph Database D) Designing a network database	A	
	Testing and optimization of the relational database takes place on the subject of: A) Database integrity B) Database Security C) Database availability D) Efficiency and efficiency	G	
	Objects that organize the interface for entering and editing data in database tables in Microsoft Access are called: A) Tables B) Requests B) Forms D) Reports	IN	
	Objects created to store data in a database in Microsoft Access are called: A) Tables B) Requests B) Forms D) Reports	A	
0	Objects created to display information from a database in Microsoft Access are called: A) Tables B) Requests B) Forms D) Reports	G	
leven	Objects that allow you to select and display information from multiple database tables in Microsoft Access are called: A) Tables	B	

	B) Requests B) Forms D) Reports		
2	The data transfer protocol for the Internet, which defines the rules and procedures for transmitting data over the Internet in the form of packets, is called: A) TCP/IP B) HTTP B) Ethernet D) SMTP	A	
	The wireless networking standard that allows devices such as computers, phones, and tablets to connect to the Internet over a wireless network is called: A) TCP/IP B) WiFi B) Ethernet D) SMTP	B	
3	The service that translates domain names into IP addresses that are used to communicate between computers on a network is called: A) TCP/IP B) HTTP B) Ethernet D) DNS	G	
4	The Hypertext Transfer Protocol, which is used to transfer data between web servers and Internet browsers, is called: A) TCP/IP B) HTTP B) Ethernet D) DNS	B	
5	A protocol that defines rules for formatting, sending, and delivering e-mail messages between different computers and servers. A) TCP/IP B) WiFi B) Ethernet D) SMTP	G	
6	The standard that defines methods for transmitting data over a cable, and provides a connection between devices on a network, is called: A) TCP/IP B) HTTP B) Ethernet D) DNS	IN	

7	Services that allow users to save and upload files to cloud storage, synchronizing these files between devices and sharing them with other people, are called: A) search engines B) Social networks C) Search engines D) File servers	G	
8	Services that allow users to create profiles, share content, communicate with friends, track news are called: A) search engines B) Social networks C) Search engines D) File servers	B	
9	Services that provide the user with information upon request, allowing them to find the necessary information on the Internet, are called: A) search engines B) Social networks C) Search engines D) File servers	A	
0	The network topology, where all devices are connected to a central node (hub), which controls all connections in the network, is called: A) Star (Star) B) Bus B) Ring (Ring) D) Tree (Tree)	A	
1	A network topology where each node has its own parent and children to provide a hierarchical network structure is called: A) Star (Star) B) Bus B) Ring (Ring) D) Tree (Tree)	G	
2	The network topology, where each device is connected to neighboring devices, is called: A) Star (Star) B) Bus B) Ring (Ring) D) Tree (Tree)	IN	
3	The network topology, all devices are connected in one cable, which serves as a communication line, is called: A) Star (Star) B) Bus B) Ring (Ring)	B	

	D) Tree (Tree)		
4	The programming paradigm, in which the programmer must explicitly define the program execution process: what happens at each step and what changes occur to the data, is called: A) Imperative programming. B) Declarative programming C) Free programming D) Extreme Programming	A	
5	A programming paradigm in which the programmer describes what the desired result looks like without specifying all the steps required to achieve it. A) Imperative programming. B) Declarative programming C) Free programming D) Extreme Programming	B	
6	A programming paradigm in which a program contains a set of procedures, each of which performs a specific task, and these procedures are directly called from another program to solve the problem. A) Free programming B) Extreme Programming B) Procedural programming D) Object-oriented programming	IN	
7	A programming paradigm where the central element is an object that can have data and functionality. A) Free programming B) Extreme Programming B) Procedural programming D) Object-oriented programming	G	
8	The programming language developed by Microsoft to automate Office applications such as Excel, Word, PowerPoint, Access, etc. is called: A) C# B) Java B) Python D) VBA	G	
9	At what stage in the development of a digital product is the goal of the project, functional requirements, deadlines and budget determined? A) Design B) Service IN) Planning G) Implementation	IN	
	At what stage in the development of a digital product is the	G	

hirty	installation and configuration of software and the publication of the project on available platforms? A) Design B) Service IN) Planning G) Implementation		
1	At what stage in the development of a digital product do developers create a product concept, define user interfaces, functional requirements and software architecture A) Design B) Service IN) Planning G) Implementation	A	
2	At what stage in the development of a digital product do product updates and maintenance of its performance, changes and expansion of the functional and software part of the product take place. A) Design B) Service IN) Planning G) Implementation	B	
3	A corporate enterprise management system aimed at optimizing business processes within an organization, managing the product life cycle and planning interactions with partners is called: A) Quality management system B) Business process management system C) Risk management system III) Project management system	B	
4	A corporate enterprise management system designed for project management, resource planning and evaluation, budget management and project control is: A) Quality management system B) Business process management system C) Risk management system D) Project management system	G	
5	The corporate enterprise management system is designed to assess and control the occurrence of adverse situations related to financial, operational, reputational and other aspects of activity - these are: A) Quality management system B) Business process management system C) Risk management system III) Project management system	IN	

6	A corporate enterprise management system aimed at ensuring compliance with the standards of products and services adopted in the industry, control of production processes is called: A) Quality management system B) Business process management system C) Risk management system III) Project management system	A	
7	Decision support systems that monitor certain conditions and alert the user if changes occur that require their attention, are called: A) Warning systems B) Analytics systems C) Expert knowledge systems D) Reporting systems	A	
8	Decision support systems that are used to analyze data and identify trends are called: A) Warning systems B) Analytics systems C) Expert knowledge systems D) Reporting systems	B	
9	Decision support systems that automate decision-making processes using knowledge bases are called: A) Warning systems B) Analytics systems C) Expert knowledge systems D) Reporting systems	IN	
0	Decision support systems that collect, process and present information about the fields of activity of the organization are called: A) Warning systems B) Analytics systems C) Expert knowledge systems D) Reporting systems	G	
1	An information security method that uses special algorithms that convert information into a form incomprehensible to outsiders is called: A) Antivirus software B) Access control B) Encryption D) Backup and restore	IN	
2	An information protection method that protects devices from malicious software is called: A) Antivirus software	A	

	B) Access control B) Encryption D) Backup and restore		
3	An information protection method in which information is stored in multiple locations so that the database can be accessed after a system failure, disaster, or hack A) Antivirus software is called: B) Access control B) Encryption D) Backup and restore	G	
4	An information security method based on the fact that certain users can access certain resources only with permission is called: A) Antivirus software is called: B) Access control B) Encryption D) Backup and restore	IN	
5	Identification and audit as a method of protecting information in computer networks is: A) Logging of events related to network access and the receipt and transmission of information, so that it is possible to identify and investigate violations that have occurred. B) Security through authorization, authentication and setting access rights for groups or users. C) The use of special algorithms that help to encrypt and decrypt information transmitted over the network. D) Blocking the flow of data packets containing sensitive information and establishing rules and procedures to prevent unauthorized transmission of data from the network.	A	
6	Cryptographic protection as a method of protecting information in computer networks is: A) Logging of events related to network access and the receipt and transmission of information, so that it is possible to identify and investigate violations that have occurred. B) Security through authorization, authentication and setting access rights for groups or users. C) The use of special algorithms that help to encrypt and decrypt information transmitted over the network. D) Blocking the flow of data packets containing sensitive information and establishing rules and procedures to prevent unauthorized transmission of data from the network.	IN	
	Control over outgoing traffic as a method of protecting information in computer networks is: A) Logging of events related to network access and the receipt	G	

	and transmission of information, so that it is possible to identify and investigate violations that have occurred. B) Security through authorization, authentication and setting access rights for groups or users. C) The use of special algorithms that help to encrypt and decrypt information transmitted over the network. D) Blocking the flow of data packets containing sensitive information and establishing rules and procedures to prevent unauthorized transmission of data from the network.		
7	Access restriction as a method of protecting information in computer networks is: A) Logging of events related to network access and the receipt and transmission of information, so that it is possible to identify and investigate violations that have occurred. B) Security through authorization, authentication and setting access rights for groups or users. C) The use of special algorithms that help to encrypt and decrypt information transmitted over the network. D) Blocking the flow of data packets containing sensitive information and establishing rules and procedures to prevent unauthorized transmission of data from the network.	B	
8	Network data processing technologies that allow you to store and process large amounts of data on remote servers are called: A) Virtualization technologies B) Network storage C) Cloud technologies G) Virtualization technologies	B	
9	Network data processing technologies that allow you to work with data and applications from anywhere where there is Internet access. A) Virtualization technologies B) Network storage C) Cloud technologies G) Virtualization technologies	IN	
0	Network data processing technologies that allow you to run multiple operating systems on a single computer.	G	

Job number	Content of the question	Correct answer	The name of the discipline (practice) that forms this competence
1	The form factor of a personal computer that is convenient to use on trips and out of the office, having a built-in keyboard, touchpad and display, is called: A) Mini PC computers B) Desktop type computers B) laptop type computers D) Tablet computers	IN	
2	The form factor of a personal computer, which is most common for desktop use. consisting of a system unit and a monitor are called: A) Mini PC computers B) Desktop type computers B) laptop type computers D) Tablet computers	B	
3	The form factor of a personal computer that is commonly used for reading, watching videos, listening to music and other entertainment tasks based on Android, iOS and Windows operating systems is called: A) Mini PC computers B) Desktop type computers B) laptop type computers D) Tablet computers	G	
4	Personal computer form factors that take up less space than desktop computers are often used as media centers, and for special tasks such as control points and automated systems are called: A) Mini PC computers B) Desktop type computers B) laptop type computers D) Tablet computers	A	
5	What element of a personal computer is responsible for the execution of all commands and operations on the computer? A) motherboard B) Video card B) RAM D) Processor	G	

6	On what element of the personal computer are other components installed, such as the processor, RAM, and various controllers? A) motherboard B) Video card C) Data warehouse D Power supply	A	
7	What element of a personal computer is responsible for displaying an image on the screen? A) motherboard B) Video card B) RAM D) Processor	B	
8	What element of a personal computer is used to store data? A) motherboard B) Video card C) Data warehouse D Power supply	IN	
9	Which function in MS Word allows you to find a specific word or phrase in the text of a document and replace it with another one? A) Dictionary of synonyms B) Contextual search and replace B) Autotext D) Check spelling of words and syntax	B	
10	What function in MS Word allows you to quickly insert text fragments, macros and other elements into a document? A) Dictionary of synonyms B) Contextual search and replace B) Autotext D) Check spelling of words and syntax	IN	
11	Which feature in MS Word allows you to select from a wider list of synonyms for a selected word or phrase? A) Dictionary of synonyms B) Contextual search and replace B) Autotext D) Check spelling of words and syntax	A	

12	Which function in MS Word allows you to check spelling and syntax errors in sentences? A) Dictionary of synonyms B) Contextual search and replace B) Autotext D) Check spelling of words and syntax	G	
13	The distance between characters in MS Word is called: A) Text alignment B) Line spacing C) text spacing D) Paragraph indent	IN	
14	Placing text relative to the vertical axis in MS Word is called: A) Text alignment B) Line spacing C) text spacing D) Paragraph indent	A	
15	Changing the spacing between lines in MS Word is done using the tool: A) Text alignment B) Line spacing C) text spacing D) Paragraph indent	B	
16	"Font" text formatting features in Microsoft Word DO NOT: A) Changing the font B) Setting Text Effects C) Text alignment D) Changing the font size	IN	
17	The "Paragraph" text formatting features in Microsoft Word DO NOT: A) Text alignment B) Tabulation C) Numbering and bulleted lists D) Setting Text Effects	G	
18	Graphics, the image of which is created using mathematical formulas that determine the shape and color of objects, is called: A) 3D graphics B) Raster graphics B) Animation D) Vector graphics	G	

19	Graphics that allow you to create three-dimensional images of various objects and scenes are called: A) 3D graphics B) Raster graphics B) Animation D) Vector graphics	A	
20	Graphics that create movement and dynamics in images are called: A) 3D graphics B) Raster graphics B) Animation D) Vector graphics	IN	
21	Graphics in which an image is formed from pixels, each of which has its own color and position on the screen, is called: A) 3D graphics B) Raster graphics B) Animation D) Vector graphics	B	
22	A graphic image storage and transmission format that is used to store images with transparent backgrounds or images where image detail is more important than compressibility is called: A) PNG (Portable Network Graphics) B) BMP (Bitmap) C) JPEG (Joint Photographic Experts Group) D) GIF (Graphics Interchange Format)	A	
23	A graphic format for storing and transmitting images, which is used to create animations and short videos, is called: A) PNG (Portable Network Graphics) B) BMP (Bitmap) C) JPEG (Joint Photographic Experts Group) D) GIF (Graphics Interchange Format)	G	
24	A graphic image storage and transmission format that is used to store highly compressed photographic images is called: A) PNG (Portable Network Graphics) B) BMP (Bitmap) C) JPEG (Joint Photographic Experts Group) D) GIF (Graphics Interchange Format)	IN	

25	A graphic image storage and transmission format that stores images as pixels and provides very high image quality but can generate large files is called: A) PNG (Portable Network Graphics) B) BMP (Bitmap) C) JPEG (Joint Photographic Experts Group) D) GIF (Graphics Interchange Format)	B	
26	An Excel spreadsheet interface element that can contain one or more tables, as well as other types of objects, is called: A) Table B) Cells B) Workbook D) Sheets	IN	
27	An Excel spreadsheet interface element that consists of cells arranged in a grid and organized in rows (horizontal) and columns (vertical) is called: A) Table B) Cells B) Workbook D) Sheets	A	
28	The Excel spreadsheet interface element, which represents the sections in the workbook where the tables are located, is called: A) Table B) Cells B) Workbook D) Sheets	G	
29	The Excel spreadsheet interface element, which is a rectangular table area located at the intersection of rows and columns, and can contain data, formula, formatting, comment, and other objects, is called: A) Table B) Cells B) Workbook D) Sheets	B	
30	The formula for calculating the sum of numbers in a given range of cells in MS Excel is called: A) AVERAGE B) IF (IF) B) SUM (SUM) D) ACCOUNT (COUNT)	IN	

31	The formula for calculating the average value for numbers in a given range of cells in MS Excel is called: A) AVERAGE B) IF (IF) B) SUM (SUM) D) ACCOUNT (COUNT)	A	
32	The formula for calculating the number of values in a given range of cells in MS Excel is called: A) AVERAGE B) IF (IF) B) SUM (SUM) D) ACCOUNT (COUNT)	G	
33	The formula for performing conditional operations on data in cells in MS Excel is called: A) AVERAGE B) IF (IF) B) SUM (SUM) D) ACCOUNT (COUNT)	B	
34	Graphs that are used to compare values by category or time period, where the data is displayed in the form of columns located on the x-axis in MS Excel, are called: A) Pie Chart B) Histogram C) Line Chart D) Column Chart	G	
35	Plots that are used to display the distribution of values in a one-dimensional dataset and split the data into equal intervals and also display the number of values in each interval in MS Excel are called: A) Pie Chart B) Histogram C) Line Chart D) Column Chart	B	
36	Graphs that are used to show the changes in one or more data sets over a period of time, where the data is displayed as lines that connect points on a graph in MS Excel, are called: A) Pie Chart B) Histogram C) Line Chart D) Column Chart	IN	

37	Graphs that are used to display the shares of each category in the total, where the data is displayed in the form of "pieces of the pie", which correspond to the share of the corresponding category in MS Excel, are called: A) Pie Chart B) Histogram C) Line Chart D) Column Chart	A	
38	A Windows software tool that allows you to play audio and video files of various formats, as well as create and synchronize playlists of multimedia files, is called: A) skype B) Windows Media Player C) Windows Defender D) OneDrive	B	
39	A Windows software tool designed to protect your computer from viruses and other malicious programs is called: A) skype B) Windows Media Player C) Windows Defender D) OneDrive	IN	
40	A Windows software tool that allows you to save files and documents in the cloud so that they can be accessed from any device with an Internet connection is called: A) skype B) Windows Media Player C) Windows Defender D) OneDrive	G	
41	The Windows software tool for text messaging, audio and video calls, and conferencing is called: A) skype B) Windows Media Player C) Windows Defender D) OneDrive	A	
42	The operating system most common for personal computers and developed by Microsoft, and also available in various versions, is called: A) Linux B) macOS B) Windows D) Android	IN	

43	A computer operating system developed by Apple that runs only on Mac computers and is used primarily for creative tasks such as design, photography, and music is called: A) Linux B) macOS B) Windows D) Android	B	
44	A free and open operating system that can be installed on most types of computers, offering great flexibility and customization, making it a popular choice for servers, scientific and technical computing, and embedded systems, is called: A) Linux B) macOS B) Windows D) Android	A	
45	The operating system for smartphones and tablets developed by Google, which is an open and customizable operating system suitable for all kinds of mobile devices, is called: A) Linux B) macOS B) Windows D) Android	G	
46	A personal computer peripheral, which is an input device that allows you to move around the computer screen and click on various interface elements, is called: A) scanner B) Monitor B) mouse D) Keyboard	IN	
47	A personal computer peripheral, which is an input device used to digitize documents and images into a computer, is called: A) scanner B) Monitor B) mouse D) Keyboard	A	

48	The peripheral device of a personal computer, which is an input device used to enter text, commands and other data, is called: A) scanner B) Monitor B) mouse D) Keyboard	G	
49	A personal computer peripheral is an output device used to display information on a computer screen. A) scanner B) Monitor B) mouse D) Keyboard	B	
	A personal computer peripheral, which is an output device used to output sound from a computer, is called: A) Wi-Fi adapter B) USB stick C) Acoustic system D) Camera	IN	

7.3.1. Current control

In the learning process, evaluation tools for midterm monitoring of progress are used: reports; surveys; tasks;

Sample tasks for current control, examination tickets are given in the appendix.

When performing current control, it is possible to use test material. Samples of control questions and tasks for conducting current control are given in the appendix. When implementing the undergraduate program, the organization has the right to use e-learning and distance learning technologies. All materials are posted in the LMS of the Moscow Poly (https://online.mospolytech.ru/).

When teaching people with disabilities, e-learning and distance learning technologies should provide for the possibility of receiving and transmitting information in forms accessible to them.

6.1.1. A list of competencies indicating the stages of their formation in the process of mastering the educational program.

As a result of mastering the discipline (module), the following competencies are formed:

Competency Code	As a result of mastering the educational program, the student must have
OPK-5	The ability to use modern information technologies and software tools in solving professional problems, including the management of large data arrays and their intellectual analysis.
OPK-6	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity

In the process of mastering the educational program, these competencies, including their individual components, are formed in stages during the development of disciplines (modules), practices by students in accordance with the curriculum and calendar schedule of the educational process.

7.3.2 Form of intermediate certification: examination.

Intermediate certification of students in the form of an exam is carried out based on the results of all types of educational work provided for by the curriculum for a given discipline (module), while taking into account the results of current monitoring of progress during the semester. The assessment of the degree of achievement by students of the planned learning outcomes in the discipline (module) is carried out by the teacher conducting classes in the discipline (module) by the method of expert assessment. Based on the results of the intermediate certification for the discipline (module), the mark "excellent", "good", "satisfactory" or "unsatisfactory" is given.,

Only students who have completed all types of educational work provided for by the work program for the discipline "Digitalization of Management Processes" are allowed to the intermediate certification (it is indicated what exactly - passed the intermediate control, completed laboratory work, made a report, etc.)

Evaluation scale	***Description***

Great	*All types of educational work provided for by the curriculum were completed. The student demonstrates the correspondence of knowledge, skills and abilities given in the tables of indicators, operates with the acquired knowledge, skills, skills, applies them in situations of increased complexity. In this case, minor errors, inaccuracies, difficulties in analytical operations, transferring knowledge and skills to new, non-standard situations can be made.*
Fine	*All types of educational work provided for by the curriculum were completed. The student demonstrates a good correspondence of knowledge, skills and abilities given in the tables of indicators, operates with the acquired knowledge, skills, skills, applies them in situations of ordinary complexity. At the same time, some errors, inaccuracies, difficulties in analytical operations, transferring knowledge and skills to new, non-standard situations may be made.*
Satisfactorily	*Not all types of educational work provided for by the curriculum have been completed. The student demonstrates incomplete correspondence of knowledge, skills and abilities given in the tables of indicators, does not confidently operate with the acquired knowledge, skills, skills, does not apply them in situations of increased complexity. At the same time, mistakes, inaccuracies, difficulties in analytical operations, the transfer of knowledge and skills to new, non-standard situations can be made.*
Unsatisfactory	*One or more types of educational work provided for by the curriculum have not been completed. The student demonstrates incomplete correspondence of knowledge, skills and abilities given in the tables of indicators, significant errors are made, the lack of knowledge, skills and abilities is manifested in a number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations.*

Only students who have completed all types of educational work provided for by the work program for the discipline are allowed to intermediate certification.