

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
SUMY NATIONAL AGRARIAN UNIVERSITY**

**Faculty of Economics and Management  
Department of Management named after Professor L.I. Mykhailova**

**MODULE SYLLABUS**

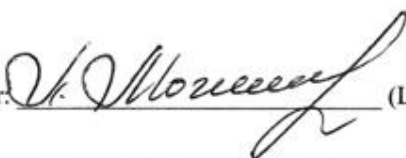
**Information professional technologies**  
**(compulsory/optional)**

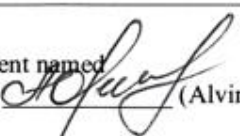
Implemented within the framework of the educational programmer **Management**  
(name)

in the speciality 073 «Management»  
(code, title)

at the first (bachelor's) level of higher education

**Sumy-2023**

Author:  (Liudmyla MOHYLNA, PhD, Associate Professor)


Module syllabus agreed at the Department of Management named after Professor L.I. Mykhailova	Minutes No <u>14</u> dated <u>05.06.23</u>
	Head Department of Management named after Professor L.I. Mykhailova <u></u> (Alvina ORIEKHOVA)

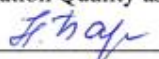
**Approved by:**

Guarantor of the Academic program  (Nataliia STOYANETS)

Dean of the Faculty  (Margarita LYSHENKO)

Syllabus review (attached) is provided by:  (Viktoriia TKACHENKO)

 (Liudmyla DASHUTINA)

Representative of the Department of Education Quality assurance, licensing and accreditation  (N. Baranik)

Registered in electronic data base 20.06. 2023

**Syllabus review data:**

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program

## 1. MODULE OVERVIEW

1.	Title	Information professional technologies		
2.	Faculty/Department	Faculty of Economics and Management/ Department of Management named after Professor L.I. Mykhailova		
3.	Type (compulsory or optional)	Compulsory		
4.	Program(s) to which module is attached (to be filled in for compulsory types)	«Management» Academic Program, area of specialization 073 «Management»		
5.	Module can be suggested for (to be filled in for optional types)			
6.	Level of the National Qualifications Framework	NQF of Ukraine - level 6, FQ-EHEA - first cycle, EQF-LLL - level 6.		
7.	Semester and duration of module	4 semester, 18 weeks		
8.	ECTS credits number	5		
9.	Total workload and time allotment	Directed study		Self-directed study
		Lectures	Practicals	Labs
		44	30	76
10.	Language of instruction	English		
11.	Module leader	Mohylna Liudmyla – Ph.D., Associate Professor, Associate Professor at the Department of Management named after Professor L.I. Mykhailova Hours of consultations - every Tuesday at 12.15, room 303 e		
12.	Module leader contact information	Farafonova_L@ukr.net		
13.	Module description	The educational component «Information professional technologies» contributes to future management bachelors obtaining an appropriate level of theoretical knowledge, the formation and development of special skills, practical skills in the development and use of modern information technologies for the effective implementation of management activities, to create and organize effective communications in various areas of the organization's activities.		
14.	Module aim	Purpose: formation of future managers' knowledge and skills regarding modern information technologies, their rational use, as well as practical skills of effective use of information technologies to solve professional tasks in the process of performing managerial activities, when working with office documents.		
15.	Module Dependencies (prerequisites, co-requisites, incompatible modules)	The educational component is based on basic knowledge of the ECs «Informatics and computer technology» The educational component is the basis for studying the ECs «Management», «Management in the digital economy»		
16.	The policy of academic integrity	Compliance with academic integrity by higher education applicants involves the independent completion of academic tasks, tasks of current and final control, learning outcomes. Applicants for higher education are expected to adhere to the principles of academic integrity, being aware of the consequences of its		

		<p>violation, which is determined by the regulatory documents of Sumy National Agrarian University, in particular the Code of Academic Integrity, the Regulations on the Prevention and Detection of Academic Plagiarism at Sumy NAU (a complete list of regulatory documents is available on the university website <a href="https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/">https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/</a>).</p> <p>It is unacceptable for higher education students:</p> <ul style="list-style-type: none"> <li>- When performing tests and theoretical surveys, use sources of information (oral (hints), written (works of other persons), printed (books, manuals), electronic (phones, tablets), not allowed by the teacher. For the use of telephones and computer facilities without the permission of the teacher due to violation of discipline, the higher education student receives 0 points for the lesson and is obliged to work out such a lesson.</li> <li>- Cheating during tests is prohibited. Mobile devices are allowed to be used only during online testing. When working on assignments, no violation of academic integrity is allowed: when using Internet resources and other sources of information, a higher education student must indicate the source used to complete the assignment.</li> </ul>
17	Link in Moodle	<a href="https://cdn.snau.edu.ua/moodle/course/view.php?id=5135">https://cdn.snau.edu.ua/moodle/course/view.php?id=5135</a>

## 2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

MLOs: On successful completion of the module the learner will be able to:	PLOs		How assessed
	PLO <sub>7</sub>	PLO <sub>19</sub>	
MLOs 1 Understand the acquired theoretical base regarding the concept, place, stages and modern directions of development of information technologies in management learn successfully use it in practice.	x	x	Tests of multiple choice.
MLOs 2 Identify the company's information needs for external and internal information, necessary for making management decisions; to form the information, technical and software support of the information system of the enterprise, to assess the feasibility of implementing or improving the latest information technologies.	x		Multiple choice tests; solving a practical task.
MLOs 3 Use a variety of test and graphic editors to design results in everyday professional activities.		x	Solving a practical task.
MLOs 4 To demonstrate the skills of using standard software and technical tools and original software products aimed at solving management tasks when making management decisions.		x	Solving a practical task.
MLOs 5 Solve complex practical tasks in the field of management, which involves substantiating economic efficiency, developing a sufficient number of alternative options, choosing the optimal solution and taking responsibility for their implementation.		x	Solving a practical task.

### 3. MODULE INDICATIVE CONTENT

Topics	Distribution of hours			Learning resources	
	Directed study		Self-directed study		
	Lectures	Practicals	Labs		
<p><b>Topic 1 Information as the basis of modern technologies</b></p> <p>1 The concept of information, the relationship between the concepts of "information" and "data".</p> <p>2 The concept of information and information culture. Properties of information and requirements for it.</p> <p>3 Structuring and formalized presentation of information.</p> <p>4 Information resources as an object of information technology application.</p> <p>5 The current state of informatization in Ukraine.</p>	2	2		3	Base: 1-3. Guidelines: 1 Additional resources: 3, 4.
<p><b>Topic 2 Information technologies in management: definition, stages of development and classification</b></p> <p>1 Concept of information technology.</p> <p>2 History of the development of computer technology and IT.</p> <p>3 Stages of technology development.</p> <p>4 General characteristics of the main types of information technology.</p> <p>5 Information procedures, stages of economic information processing</p> <p>6 Classification of information technologies for computer modeling of complex systems.</p> <p>7 Competitive advantages of enterprises using information technologies.</p> <p>8 The importance of using information technology in the management of an organization for business.</p>	2	-		3	Base: 1-3. Guidelines: 1 Additional resources: 3, 4, 21, 22.
<p><b>Topic 3 General provisions of information systems</b></p> <p>1 The concept of an information system.</p> <p>2 Classification of information systems.</p> <p>3 Structure of information systems.</p>	2	-		3	Base: 1-3. Guidelines: 1 Additional resources: 3, 4, 21, 22.

<p>4 Organizational and methodological foundations for the creation and implementation of information systems.</p> <p>5 Evaluation of the economic efficiency of information systems.</p> <p>6 Security of information systems.</p>					
<p><b>Topic 4 Internet technologies in enterprise activity</b></p> <p>1 Internet technologies in management</p> <p>2 Search engines. Overview of popular search engines. Formulation of search queries.</p> <p>2 Internet commerce.</p> <p>3 Interactive marketing.</p> <p>4 Virtual enterprises</p> <p>5 Blockchain technologies</p>	2	2		3	Base: 1-3. Guidelines: 1 Additional resources: 9, 10, 11, 15.
<p><b>Topic 5 Application software of the manager's workstation</b></p> <p>1 Classification of application software.</p> <p>2 Classes of application software</p> <p>3 Overview of the software of the manager's office software packages. Composition and purpose of components.</p>	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 9, 10, 11, 15.
<p><b>Topic 6 Information technologies for processing text information in the work of a manager</b></p> <p>1 Text editors. Purpose and capabilities of text editors.</p> <p>2 Word processor and its functions.</p> <p>3 Technologies of document generation.</p> <p>4 Characteristics of modern electronic document management systems.</p> <p>5 Documents: tools for editing and formatting documents by a manager. Interface of the Microsoft Word text editor.</p> <p>6 Working with documents of complex structure, printing text design using templates and styles.</p>	4	4		4	Base: 1-3. Guidelines: 1 Additional resources: 2, 21.
<p><b>Topic 7 Electronic document management systems</b></p> <p>1 The concept of an electronic document for management activities.</p> <p>2 Formats of electronic documents</p> <p>3 Electronic office. Information technologies for office automation.</p> <p>4 Programs for working with text</p>	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 2, 21.



documents. 5 Preparation of business documents by a manager.					
<b>Topic 8 Information technologies for processing of economic information</b> 1 Characteristics and classification of technological operations 2 Technological processes of automated processing of economic information. 3 Information procedures, stages of economic information processing 4 The concept of information technology and its classification. 5 Computer systems and networks	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 2, 7, 12
<b>Topic 9 Systems of tabular data processing</b> 1 Development of templates for dynamic tables with economic information. 2 Application of spreadsheets for database management. 3 Technologies of statistical data analysis. 4 Modeling of economic systems.	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 7, 12
<b>Topic 10 Information technologies for solving economic problems (economic problems in the EXCEL environment).</b> 1 Spreadsheets. 2 Technology of tabular information processing: organization of calculations, basic operations with data, intermediate results, pivot tables, data analysis, solution search, graphical representation of results. 3 Explanation of the use of built-in MS Excel functions. 4 Organize collaboration with spreadsheets in the cloud	4	2		4	Base: 1-3. Guidelines: 1 Additional resources: 7, 12
<b>Topic 11 Using built-in spreadsheet functions to develop forecasting studies for making management decisions. Analyzing time series and calculating a trend line in MS Excel.</b> 1 Statement of the problem. 2 Mathematical model of the problem. 3 Determination of the trend line. Graphical representation of the	2	6		4	Base: 1-3. Guidelines: 1 Additional resources: 7, 12, 20, 21.

trend line. 4 Analysis of the results.					
<b>Topic 12 General principles of creating multimedia presentations and slide shows</b> 1 The concept of computer presentations, their purpose. 2 Creating, opening and saving a presentation. 3 Creating text labels and inserting graphic images. 4 Principles of presentation styling. 5 Add animation effects to slide objects. Demonstrate presentations and set up presentation time.	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 20-22.
<b>Topic 13 Structure and principles of cloud data storage</b> 1 Theoretical information about cloud technologies. 2 Architecture and offers from leading cloud service providers 3 Features of using the structure of cloud data storage. 4 Cloud services as a replacement for office applications 5 Experience of using cloud technologies abroad 6 Creating online surveys using cloud technologies	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.
<b>Topic 14 Digital tools for manager-administrator teamwork</b> 1 Working in a group as a participant depending on the dominant type of behavior in the team, forming your own contribution to the team's tasks. 2 Skills of a digital manager. Important for effective teamwork. 3 Using Microsoft Office 365 and Google cloud services for teamwork. 4 Advantages of using cloud services in the process of teamwork. 5 Planning work using cloud services (WiseMapping, Lucidchart, draw.io). 6 Common tools for online meetings (Cisco Webex Meeting, Skype, Google Hangouts Meet, Zoom). 7 Online whiteboards for	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.

discussing collective projects (Conceptboard, Planner, Miro, Whiteboard).					
<b>Topic 15 Strategic models of information systems application in management</b> 1 Classification of management information systems by completeness of functions management. 2 Strategic models of enterprise management. 3 Material resource planning systems (MRP). 4 Production resource planning systems (MRP II). 5 Enterprise resource planning systems (ERP). 6 Customer-synchronized resource planning systems (CSRP). 7 Advanced planning systems (APS). 8 Corporate information system R/3. 9 Supply chain integration systems SCI. 10 Customer relationship management systems CRM. 11 Features of information systems for multinational corporations (MNCs). Organizational structure of corporations. 12 Requirements for the design and implementation of information systems of MNCs. Integrated information system for managing MNC R/3.	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 10, 11.
<b>Topic 16 ERP-systems.</b> 1 Evolution of ERP systems. 2 Features of the use of ERP systems. 3 Basic principles of choosing an ERP system. 4 Composition of ERP systems. 5 The main functions of ERP systems. 6 Advantages and disadvantages of ERP systems. 7 Overview of modern ERP systems.	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 10, 11.
<b>Topic 17 Organization of security when working with a computer on the Internet. Information resources of the global Internet</b>	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.

<p>1 Basic concepts of information and communication technology security Information security</p> <p>2 Causes of system vulnerability and types of threats.</p> <p>3 Modern authorization systems (digital, graphic and other)</p> <p>4 Network screens, firewalls</p> <p>5 Information archiving.</p> <p>6 Methods of information protection.</p> <p>7 Cybercrime.</p> <p>8 Authentication and authorization of PC users.</p> <p>9 Electronic banking.</p> <p>10 Online shopping.</p> <p>11 Cryptography and encryption of information.</p> <p>12 The relationship of e-commerce with consumer behavior, business processes and competition.</p> <p>13 Retail sales on the Web site.</p> <p>14 Electronic payments and security.</p>					
<p><b>Topic 18 Technologies for ensuring the security of information systems.</b></p> <p>1 Components of security</p> <p>2 Threats to availability</p> <p>3 Software antiviruses.</p> <p>4 Legal regulation of the information sphere.</p> <p>5 Blockchain technology and information security</p>	2	2		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.
<p><b>Topic 19 Models in decision support systems</b></p> <p>1 Concept and components of decision support systems</p> <p>2 Model databases and model database management systems</p> <p>3 Modeling situations requiring decision-making. Correspondence of certain models to certain types of situations</p> <p>4 General types of problems that can be solved by model-based DSS. Types of models.</p> <p>5 The use of artificial intelligence for making managerial decisions.</p>	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.
<p><b>Topic 20 The essence and problems of artificial intelligence</b></p> <p>1 The concept of artificial intelligence</p>	2	-		4	Base: 1-3. Guidelines: 1 Additional resources: 21, 22.

2. Areas of application of artificial intelligence methods: proofs of informal theorems and solving problems with fuzzy logic, game theory, research of game situations, pattern recognition, adaptive programming, simulation of creative activity, training of systems based on neural networks, control systems and robotics, construction of specialized information systems for business support. 3. Models that use neural networks. Artificial neural networks. 4. Training of an artificial neural network.					
<b>Total</b>	44	30		76	

#### 4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	Hours	Learning methods (self-directed study)	Hours
MLOs 1. Understand the acquired theoretical base regarding the concept, place, stages and modern directions of development of information technologies in management learn successfully use it in practice.	Problem lecture, thematic discussion, explanation.	14	Express survey of higher education applicants, oral survey, testing, use of training and control tests, use of lecture notes, presentation	15
MLOs 2. Identify the company's information needs for external and internal information, necessary for making management decisions; to form the information, technical and software support of the information system of the enterprise, to assess the feasibility of implementing or improving the latest information technologies.	Lecture, thematic discussion, explanation, practical session.	15	Express survey of higher education applicants, oral survey, testing, use of training and control tests, use of lecture notes, presentation	15
MLOs 3. Use a variety of test and graphic editors to design results in everyday professional activities.	Lecture, thematic discussion, explanation, practical session.	15	Independent work with the textbook, with lecture notes in the Moodle system, solving problems, taking tests	15

MLOs 4. To demonstrate the skills of using standard software and technical tools and original software products aimed at solving management tasks when making management decisions.	Lecture, thematic discussion, explanation, practical session.	15	Independent work with the textbook, with lecture notes in the Moodle system, solving problems, taking tests	15
MLOs 5. Solve complex practical tasks in the field of management, which involves substantiating economic efficiency, developing a sufficient number of alternative options, choosing the optimal solution and taking responsibility for their implementation.	Lecture, thematic discussion, explanation, practical session.	15	Independent work with the textbook, with lecture notes in the Moodle system, solving problems, taking tests	16
<b>Total</b>		74		<b>76</b>

## 5. ASSESSMENT

### 5.1. Diagnostic assessment

### 5.2. Summative assessment

#### 5.2.1. Intended learning outcomes methods:

No	Summative assessment methods	Grades	Deadline
1.	Testing	20 points /20%	During the semester
2.	Multiple choice test (intermediate certification)	15 points / 15%	For 6 weeks
3.	Individual tasks (individual tasks for classroom work; individual tasks for independent performance)	35 points / 35%	According to the schedule of practical classes until the end of week 8 and week 17
4.	The exam	30 points / 30%	According to the approved schedule

#### 5.2.2. Grading criteria

Summative assessment method	Unsatisfactory	Satisfactory	Good	Excellent
Testing	< 13 points	13-15 points	16-18 points	18-20 points
	<i>the correct answer was provided for less than 60% of the tasks</i>	<i>the correct answer was provided for 60%-74% of the tasks</i>	<i>75% - 89% of tasks were answered correctly</i>	<i>90% or more tasks were answered correctly</i>
Multiple choice test (intermediate certification)	< 8 points	8-10 points	11-13 points	14-15 points
	<i>&lt;5 correct answers</i>	<i>5-6 correct answers</i>	<i>7-8 correct answers</i>	<i>9-10 correct answers</i>
Individual tasks	< 20 points	20-26 points	27-30 points	31-35 points
	<i>Task requirements not met</i>	<i>Most of the requirements are met, but some components are</i>	<i>All requirements of the task have been fulfilled.</i>	<i>All the requirements of the task were fulfilled, the results were presented as</i>

		<i>missing or insufficiently disclosed.</i>		<i>part of a general discussion.</i>
The exam	<i>&lt;19 points</i>	<i>19-23 points</i>	<i>24-27 points</i>	<i>28-30 points</i>
	<i>Task requirements not met</i>	<i>Most of the requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue</i>	<i>All requirements of the task have been fulfilled</i>	<i>All the requirements of the task were met, creativity, thoughtfulness was demonstrated, and an own solution to the problem was proposed</i>

### 5.3. Formative assessment

Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. Formative exercises are designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work.

No	Formative Assessment elements	Date
1	Verbal feedback from the teacher regarding clarification of specific situations during classroom work	constantly
2	Oral survey during classes and feedback from the teacher during classroom work and practical tasks	constantly
3	Verbal feedback from the teacher regarding the performance of individual tasks in practical classes	according to the schedule of practical classes until the end of week 7 and week 16

## 6. LEARNING RESOURCES

### 6.1. Base

- 1 Andreas Graesser. Run IT: Dominating Information Technology (Management for Professionals). Springer; 1st ed. 2019 Edition, 2019. 319 p.
- 2 Efraim Turban, Carol Pollard, Gregory Wood. Information Technology for Management. Wiley, 2018. 480 p. URL: <https://www.perlego.com/book/1978852/information-technology-for-management-ondemand-strategies-for-performance-growth-and-sustainability-pdf>
- 3 Efraim Turban, Carol Pollard, Gregory Wood. Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability. Wiley; 12th Edition. 2021. 640 p.

### 6.2. Guidelines

- 1 Mohylina L. Information professional technologies. E-course in Moodle. URL: <https://cdn.snau.edu.ua/moodle/course/view.php?id=5135>

### 6.3. Additional resources

- 1 Hunter Muller. Future State 2025: How Top Technology Executives Disrupt and Drive Success in the Digital Economy. Wiley; 1st Edition, 2020. 320 p.
- 2 James Holler. Microsoft Office 365 for Beginners 2022: [8 in 1] The Most Updated All-in-One Guide from Beginner to Advanced | Including Excel, Word, PowerPoint, OneNote, OneDrive, Outlook, Teams and Access Kindle Edition, 2022. 587 p.
- 3 Francisco Castillo. Managing Information Technology. Softcover reprint of the original 1st ed. Springer; 2016 Edition, 2018. 254 p.
- 4 Geoff Williams, Michael May. The Facility Manager's Guide to Information Technology: Learning Series - Module 1 Kindle Edition, 2021. 64 p.
- 5 Haes. Enterprise Governance of Information Technology (Management for Professionals). Springer; 3rd ed. 2020 Edition, 2019. 220 p.
- 6 Kirti Bhatia S.S., Gupta Vikram, Amandeep Kaur DBMS with MS Access BCA & BA 3rd Sem. Pbi. Uni. Paperback – January 1, 2016.
- 7 Mike Wang. EXCEL 2022: The All In One Step-by-Step Guide From Beginner To Expert. Discover Easy Excel Tips & Tricks to Master the Essential Functions, Formulas & Shortcuts to Save Time & Simplify Your Job. Independently published, 2022. 158 p.
- 8 Newton A.J. Start a Successful Career Today in Information Technology: Computer Science. Independent Publishing Network, 2021. 162 p.
- 9 Seyed Samad Hosseini, Sahar Heydarabadi, Younis Jabarzadeh. Information Technology and Knowledge Management. LAP LAMBERT Academic Publishing, 2018. URL: [https://www.perlego.com/book/3386950/information-technology-and-knowledge-management-pdf?queryID=10795593926a8c7d06c95f094c26aa1f&index=prod\\_BOOKS&gridPosition=15](https://www.perlego.com/book/3386950/information-technology-and-knowledge-management-pdf?queryID=10795593926a8c7d06c95f094c26aa1f&index=prod_BOOKS&gridPosition=15)
- 10 Sherwyn Allibang. Enterprise Resource Planning (ERP): Preparedness for ERP System Implementation of Small and Medium Enterprises. Kindle Edition, DBest Reads, 2016. 31 p.
- 11 Tamaro Green. Big Data Analytics in Information Technology Management. TJG Web Services, 2020. 62 p.
- 12 Benjamin Zeldovich. Excel 2022: Dominate Microsoft Excel & Master the 101 Most Popular Formulas from Scratch. Become a Pro in 5 Minutes a Day with Practical and Step-by-Step Tutorials. Kindle Edition, 2022. 142 p.
- 13 Jeremy L. Boerger. Rethinking Information Technology Asset Management. Business Expert Press, 2021. 150 p.
- 14 Carol V. Brown, Daniel W. DeHayes, Jeffrey Slater, Wainright E. Martin. Managing Information Technology. Pearson; 7th Edition. 744 p. URL: [https://www.academia.edu/43658549/Managing\\_Information\\_Technology\\_7th\\_Edition\\_by\\_Carol\\_V\\_Brown\\_Daniel\\_W\\_DeHayes\\_Jeffrey\\_Slater\\_Wainright\\_E\\_Martin](https://www.academia.edu/43658549/Managing_Information_Technology_7th_Edition_by_Carol_V_Brown_Daniel_W_DeHayes_Jeffrey_Slater_Wainright_E_Martin).



- 15 Kenneth Laudon, Jane Laudon. Management Information Systems: Managing the Digital Firm 16th Edition. Pearson; 16th Edition, 2020. 656 p.
16. Debra Geoghan. Visualizing Technology Complete (What's New in Information Technology). Pearson; 7th Edition, Kindle Edition, 2018. 704 p.
- 17 Litmux Books. Information Systems: How Application Of Big Data Drives Industries. The Real Work of Information Systems. Kindle Edition. Litmux.com, 2021. 85 p.
- 18 Debra Geoghan. Visualizing Technology Introductory (2-downloads) (What's New in Information Technology). Pearson; 7th Edition, Kindle Edition, 2018. 544 p.
- 19 Nawal Chemma, Mohammed El Amine Abdelli, Anjali Awasthi, Emmanuel Mogaji. Management and Information Technology in the Digital Era: Challenges and Perspectives. Emerald Publishing Limited, 2022. 336 p.
- 20 Robert Karamagi. Information Technology Entrepreneurship and Management. Kindle Edition, 2021. 262 p.
- 21 Eric Frick. Information Technology Essentials Volume 1: Introduction to Information Systems. Kindle Edition, 2019. 275 p.
- 22 Eric Frick. Information Technology Essentials Volume 2: The Beginner's Guide to C#. Kindle Edition, 2020. 277 p.

#### **6.4 Software**

- 1 Use of standard Microsoft packages: Word, Excel, PowerPoint.
- 2 Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens).
- 3 Zoom Video Communications, Inc. v. 5.6.1 software - for organizing training via video communication (if necessary).
- 4 Moodle distance learning system software - for organizing distance learning for higher education students (access to teaching materials, communication with the teacher, various types of assessment).
- 5 Web 2.0 software: Google Cloud & Docs - for providing teaching materials, communication with higher education students, performing individual tasks and posting tasks.