ЗАТВЕРДЖЕНО
на засіданні кафедри
інформаційних систем.
Протокол № 1 від 27.08.2024 р.

ПОГОДЖЕНО
Проректор з навчально-методичної роботи

Каріна НЕМАШКАЛО

КОМП'ЮТЕРНІ ІНФОРМАЦІЙНІ СИСТЕМИ В ОРГАНІЗАЦІЇ РОБОТИ ІТ-ПІДПРИЄМСТВ

робоча програма навчальної дисципліни (РПНД)

Галузь знань	**12 "Інформаційні технології"**
Спеціальність	**126 "Інформаційні системи та технології"**
Освітній рівень	**другий (магістерський)**
Освітня програма	**"Інформаційні системи та технології"**

Статус дисципліни	**вибіркова**
Мова викладання, навчання та оцінювання	**англійська**

Розробник:
к.е.н., доцент   підписано КЕП   Олена ПЛОХА

Завідувач кафедри
інформаційних систем   Дмитро БОНДАРЕНКО

Гарант програми   підписано КЕП   Олександр КОЛГАТІН

Харків
2024

APPROVED
at the meeting of the information systems department.
 Protocol № 1 of 27.08.2024

AGREED
Vice-rector for educational and methodical work

_____ Karina NEMASHKALO

COMPUTER INFORMATION SYSTEMS IN THE WORK ORGANIZATION OF IT ENTERPRISES

Program of the course

Field of knowledge	**12 " Information technologies "**
Specialty	**126 "Information systems and technologies"**
Study cycle	**second (master's)**
Study programme	**"Information systems and technologies"**

Course status	**elective**
Language	**English**

Developer:
Doctor of Economics,
associate professor   digital signature   Olena PLOKHA

Head of the information
systems department   _____   Dmytro BONDARENKO

Head of Study
Programme   digital signature   Oleksandr KOLGATIN

Kharkiv
2024

INTRODUCTION

In connection with the development of computer information systems and technologies and the growth of their role in the activities of enterprises and organizations in various fields of activity, the question of increasing the efficiency of IT enterprise management is becoming increasingly acute. In order to effectively organize the work of an IT enterprise, it is necessary to have appropriate software, organizational and technical support. At the same time, the ability to quickly adapt the activities of IT enterprises to changes in the external environment will play an important role.

The course "Computer information systems in the organization of the work of IT enterprises" (hereinafter "CIS in the organization of the work of IT enterprises") is designed to develop students' competencies in the implementation and support of information systems and the use of information processing technologies, decision support systems in the organization of work enterprises in the field of information technologies (IT).

The course "CIS in the organization of work of IT enterprises" covers two most important aspects:

firstly, applicants acquire competences regarding the organization of the work of an IT enterprise, the design of an information system for managing the activities of an IT enterprise, considering it as a complex business process, determine the functional and structural content, information flows and data storage models;

secondly, the applicants acquire competences regarding the management of an IT enterprise by studying the marketing, organizational and financial aspects of the activity, using modern information systems, technologies and software.

The purpose of teaching the course is to develop the competencies of higher education students regarding the implementation and support of information systems and the use of information processing technologies, decision support systems in the organization of the work of enterprise management in the field of information technologies.

The object of the course is the processes of organizing the work of IT enterprises using information systems and technologies.

The subject of the course is the main approaches and methods of analysis of information processing, decision support systems in the organization and management of enterprises in the field of information technologies.

The tasks of the course are to master the skills of organizing the work of IT enterprises by using information systems and technologies.

The learning outcomes and competencies formed by the course are defined in table 1.

Table 1

Learning outcomes and competencies formed by the course

Learning outcomes	Competences
LO01	GC1
LO02	GC02
LO03	SC01
LO04	GC04
LO05	SC01, SC05
LO07	SC05
LO08	SC03
LO12	SC01, SC07

where, LO01. Searching for necessary information in scientific and technical literature, databases, other sources, analyse and evaluate this information.

LO02. Communicating freely in national and foreign languages in scientific, industrial and social spheres of activity.

LO03. Making effective decisions on the problems of information infrastructure development, creation and application of IT.

LO04. Managing ICT development, implementation and operation processes that are complex, unpredictable and require new strategic and team approaches.

LO05. Determining the requirements for ICT on base of business processes and needs of interested parties' analysis, to develop technical tasks.

LO07. Making a grounded choice of project solutions and design a service-oriented information architecture of the enterprise (institution, organisation, etc.).

LO08. Developing models of information processes and systems of various classes, to use methods of modelling, formalisation, algorithmization and implementation of models using modern computer tools.

LO12. Improving the information system on the base of business processes analysis.

GC01. Ability to abstract thinking, analysis and synthesis

GC02. Ability to communicate in a foreign language.

GC04. Ability to develop and manage projects.

SC01. Ability to develop and apply IST necessary for solving strategic and current tasks.

SC03. Ability to design information systems taking into account the specifics of their purpose, incomplete/insufficient information and conflicting requirements

SC05. Ability to use modern data analysis technologies to optimize processes in information systems.

SC07. Develop and implement innovative projects in the field of ICT.

COURSE CONTENT

Content module 1. Organization of enterprise activities in the field of information technologies

Topic 1. Business in the field of information technologies and trends in its development

1.1. The essence of information business and its features.

Concept and economic and organizational foundations of information business. Criteria by which the concept of "information company" is defined. Factors influencing the development of information business. Consumer groups of information goods. Main features of information business.

1.2. Information products and services (IPP).

Concept of information product and information service. International standards of industrial classification of the service sector and other types of information services. Horizontal and vertical movement of information in the information business. PPI classification.

1.3. Entrepreneurship environment in the field of information technologies.

Inside the external environment of entrepreneurship: intellectual resources, potential consumers and communication channels. Regulatory and legal support in the field of informatization. Main aspects of international cooperation in the field of informatization. Forms of state regulation of informatization processes in developed countries.

1.4. Information business model.

Structural and functional model of information business. General business model. Main functions of the business: finance, marketing, personnel and logistics. Information and communication technologies.

1.5. The information market and the mechanism of its functioning.

The concept and structure of the information market. Mechanism of functioning of the information market. Characteristics of producers of information products and services. Subjects of the information market: customers, developers, owners, intermediaries. Models of selling information products. Scheme of relations between the vendor, distributor, dealer and end user.

1.6. Stages, trends and prospects of the development of the information market of Ukraine.

Stages and trends in the development of the information market of Ukraine. Components of the National Informatization Program. Projects on the creation of a national system of information resources of Ukraine. Disadvantages of Ukraine's information policy on the informatization of countries.

Topic 2. Creation and organization of activities of IT industry companies

2.1. Organizational and legal forms of business, advantages and disadvantages of organizational and legal forms for IT enterprises.

Subjects of entrepreneurial activity. Models of entrepreneurial behavior. Types of entrepreneurial activity. Types of organizational and legal forms of business. Classification of organizational forms of information business. Classification groupings of information business enterprises inherent in the information field. Information company founders and their functions. General requirements for the content of founding documents of companies. The procedure for state registration of an enterprise. Determination of strategic needs in information services.

2.2. The main stages and stages of creating an IT enterprise.

Preparatory stage: making a decision on entrepreneurial activity based on an IT idea; determination of the goals of entrepreneurial activity, development of the enterprise development strategy; choice of organizational and legal form of entrepreneurship; choosing the location of the enterprise. Establishment stage: determining the composition of the founders; determining the amount of initial capital; development of the name of the enterprise, preparation of constituent (founding) documents; enterprise registration; registration of enterprise attributes. Organizational stage: organization of enterprise management; formation of resource supply and product sales networks; personnel selection; organization of the production process.

2.3. Documentation of the creation of an IT enterprise.

Company charter and founding agreement. Certificate of state registration. Obtaining a certificate from EDRPOU. Registration in the statistical authorities. Registration by the payer of a single social contribution. Registration with the State Tax Service.

Topic 3. Designing a management system for IT enterprises

3.1. Peculiarities of management of IT companies.

The objective necessity of managing subjects of innovative activity. Organization of management of IT enterprise activities. Characterization of the main stages of the processes of organization and management of IT enterprise activities. Sources of funding for IT enterprise activities. An innovative component in the activity of an IT enterprise. Models of the innovation process.

3.2. Key aspects of operational management.

The essence of operational management of the IT enterprise. Problems and tasks of operational management at the stages of the life cycle of an IT enterprise. Information base and its effective use.

3.3. The main criteria for choosing organizational structures for managing the activities of an IT enterprise.

The place and role of organizational structures in the management of IT enterprise activities. Characteristics of organizations of mechanistic and organic types. Peculiarities of organizational structures for managing IT enterprise activities. Principles and stages of building organizational structures for managing IT enterprise activities. Justification of the choice of organizational structures for managing the activities of an IT enterprise at the stages of the life cycle.

3.4. Designing an information system for managing the activities of an IT enterprise.

Concepts of development and design of information systems. Stages of

development of information systems. Support of business processes by specialized information systems. Processes of organizational planning of information systems: main stages. Formation of business development paths of the organization to create optimal information system architecture and operational plans. A systematic approach to the planning of information systems in innovative activities. Information systems planning methodology: approaches and scenarios. Models of organization development using computer packages to support management decision-making.

Content module 2. Use and implementation of computer information systems in the organization of work of an IT enterprise
Topic 4. Information systems and market research technologies
4.1. Marketing activities of IT enterprises.

Identification of the concept of "information products and services" and "information market". Determination of the situation of the information market. The main principles and functions of the formation and functioning of the information market, prerequisites for its emergence and factors contributing to its development at the stage of revolutionary transformation of economic systems.

4.2. Market research technology for IT products and services.

Content of marketing research of the market of IT products and services and its features. Concepts, objects of marketing research. Marketing information environment. Principles and conceptual approaches to marketing research. The technology of conducting marketing research of the innovation market: organizational aspects. Determining the need for innovation. Forecasting the market capacity of an innovative product using the example of IT products and services.

4.3. Use of information systems and technologies in market research of IT products and services and marketing activities.

Typical technological means of searching, collecting and accumulating marketing information. Technological means of supporting the adoption of marketing decisions. Information-analytical methods and models for supporting marketing decision-making (types of instrumental models; technologies of parametric analysis using "what-if" **methods** ; statistical models of marketing decision-making taking into account the uncertainty factor; selective method of determining demand; implementation of optimization models). Modern software products for managing marketing activities. Organization of marketing research using computer information processing technologies. Information technology for solving problems related to market research and demand for innovative products. Automation of calculations for establishing the innovation market capacity. Automation of calculations for research and evaluation of the innovation market situation. Information technology for solving problems in the management of advertising activities regarding the promotion of IT products and services on the market.

4.4. Information marketing.

Concept and functions of information marketing. Features of information marketing. The place of the marketing function in the business system. Relationship between tasks and sub-functions of marketing. Activities carried out within the marketing sub-functions . The essence of missionary marketing (consumer demand for

information products and services is formed by explaining the advantages and features of new information products). Conceptual modeling of information marketing process. Analysis of market opportunities of the enterprise. Generalized scheme of interaction of information market participants. Scheme of information marketing process. Characteristics of the information marketing process. Research and assessment of the dynamics of public and specific information needs. Estimating the costs and results of creating a specific PPI. Development of a marketing complex.

4.5. Marketing information system .

Marketing information system. Internal reporting system. External information collection system. Marketing information analysis system.

4.6. Life cycle analysis of information products and services.

Product life cycle. Characteristics of the main stages of a typical product life cycle. Predominant types of consumers at certain stages of the life cycle of software products. Features of the life cycle of information products and services. Organizational and structural forms of information marketing management. Functional structure of the marketing service. A marketing service structure focused on specific products and services. Market-oriented marketing service structure. Relationship of tasks and sub-functions of marketing.

Topic 5. Information systems and technologies for conducting innovative activities

5.1. Informational and analytical provision of innovative development of the IT enterprise.

Existing information and analytical base of innovative development. A system of indicators for evaluating the features and effectiveness of the implementation of improving innovations, which form the basis of information and analytical support for the innovative development of an IT enterprise. Characteristics of changes in the information and analytical activity of an IT enterprise.

5.2. Transformational changes in models of innovative development of an IT enterprise.

The main goals, tasks, directions and mechanisms affecting the formation of its information and analytical support. The method of using improving innovations in modeling the innovative development of the enterprise.

5.3. Evaluation of the efficiency of innovative development of enterprises.

The system of indicators and information support of the model of innovative development of the IT enterprise.

Topic 6. Information systems and technologies in the organization of IT enterprise activities

6.1. Determination of organizational aspects of the IT enterprise.

Characterization of the goals of organizational support of the IT enterprise. Definition of the main subdivisions of the organizational plan: organizational form of

innovative business; the company's need for personnel to implement an innovative business idea; owners, managers and external consultants of the firm; organizational chart of innovative company management, personnel policy and strategy. Justification of the principles of choosing a form of business organization: financial responsibility of the entrepreneur and readiness for economic risk; system and level of taxation depending on the form of business organization; the ratio of start-up capital and the entrepreneur's own funds; efficiency of business management; taking into account the probability of bankruptcy and liquidation of the firm.

6.2. The use of information technologies in the process of organizing the activities of an IT enterprise and promoting innovative projects.

Development of the organizational structure of the enterprise, focused on innovative development in the ARIS environment. Distribution of duties and responsibilities for the development and promotion of an innovative project using MS Project.

6.3. Organization of interaction at an IT enterprise.

Management of the functionality of the IT enterprise. The main functions of the enterprise. Functional structure of the enterprise. Organization of interaction and powers of divisions of the IT enterprise. The concept and comparison of powers and responsibilities. Distribution of powers between the divisions of the enterprise. The main forms of organization of interaction between the units of the enterprise. Matrix approach to the implementation of IT projects. Advantages and disadvantages of the matrix organizational structure of IT project implementation.

Topic 7. Information systems and technologies for determining the resource provision of an IT enterprise and evaluating the effectiveness of its activities

7.1. The main tasks and structure of the IT enterprise's resource provision plan.

Justification of the main tasks of the resource provision plan. Determining the main types of resources and forecasting the need for them.

7.2. Calculation of the main indicators of the IT enterprise's resource provision plan.

Characteristics of the subdivision "Technology characteristics" (types of operations performed independently or by subcontractors). The description of the "Equipment and premises" section contains a list of equipment and software required for the implementation of the technological process; calculations of expenses related to the purchase or rental (leasing) of equipment, software and premises; information on service periods and depreciation deductions. The characteristics of the "Staff" unit consist of determining the need for personnel, assessing the level of personnel qualifications. Determination of the possible influence of external factors on the production and economic activity of the firm. Use of MS Project Expert to determine the resource support for the implementation of an innovative project.

7.3. Determination of the general need for financial resources for the implementation of IT enterprise activities.

The influence of the cost factor on the total amount of activity financing. From process-oriented cost accounting to process-oriented profitability analysis (POAR).

Linking business processes to the received income with the help of POAR. Use of POAR for the purpose of finding income factors.

7.4. Determining the efficiency of the IT enterprise.

Calculation and analysis of the main financial indicators. Carrying out a sensitivity analysis of IT projects, which makes it possible to establish the range of variations of the initial assumptions, beyond which the implementation of the proposed business project becomes problematic. Determination of the features of the development of the financial plan: the presence of a specific list of financial documents of a standard form with a single method of calculating the relevant indicators ; availability of financial plans drawn up with a three-year perspective; consistency with other sections of the business plan of the IT enterprise; the expediency of working out several scenarios of the development of events; reliability of information and financial calculations, as well as explanation of deviation of financial indicators from industry averages. Preparation of the business plan of the IT enterprise in Project Expert . Comparative characteristics of Project Expert and Prime packages Expert .

The list of laboratory studies in the course is given in the table. 2.

Table 2

The list of laboratory studies

Topic name	Content
Topic 1-Topic 2. Laboratory work 1	Development of an IT enterprise activity management system using CASE technologies (IDEF0)
Topic 2-Topic 3. Laboratory work 2	Development of an IT enterprise activity management system using CASE technologies (DFD)
Theme 4 - Theme 5. Laboratory work 3	Calculation of demand on the market for information products and services, development of a marketing plan using information technologies
Topic 6. Laboratory work 4	Organizational aspects of the work of an IT enterprise. Distribution of duties and responsibilities between team members during the implementation of the IT project
Topic 7. Laboratory work 5	Development of a resource and financial plan for the work of an IT enterprise using IS. Evaluation of the efficiency of the IT enterprise

The list of self-studies in the course is given in table 3.

Table 3

The list of self-studies

Topic name	Content
Topic 1. Task 1.	To study the peculiarities of business in the field of information technologies on the example of large international and domestic companies.

Topic 2. Task 2.	To carry out a comparative characterization of the processes of the organization of ITbusiness in Ukraine and abroad.
Topic 3. Task 3.	Conduct a comparative characterization of the company's IT activity management system proposed by various authors. Evaluate the advantages and disadvantages of each.
Topic 4. Task 4.	Investigate the peculiarities of IT market research, identify and characterize the key success factors in the market
Topic 5. Task 5.	To analyze the latest startups and identify the reasons for their relevance and market attractiveness of innovations
Topic 6. Task 6.	Conduct a comparative characterization of applications used to manage the process of organization and operation of projects .
Topic 7. Task 7.	Analyze the existing approaches to evaluating the effectiveness of the IT enterprise

The number of hours of lectures, practical (seminar) studies and hours of self-study is given in the technological card of the course.

TEACHING METHODS

In the process of teaching of the course, in order to acquire certain learning outcomes, to activate the educational process, it is envisaged to use such teaching methods as:

Problem lecture (Topic 1 - 2), mini-lecture and discussion (Topic 3 - 7).

In person (demonstration (Topic 1-7)).

Individual laboratory work (Topic 1 - 3), team laboratory work (Topic 4 - 7)).

FORMS AND METHODS OF ASSESSMENT

The University uses a 100-point cumulative system for assessing the learning outcomes of students.

Current control is carried out during lectures, practical, laboratory and seminar classes and is aimed at checking the level of readiness of the student to perform a specific job and is evaluated by the amount of points scored:

− for courses with a form of semester control as an exam: maximum amount is 60 points; minimum amount required is 35 points.

The final control includes current control and assessment of the student .

Semester control is carried out in the form of a semester exam or grading.

The final grade in the course is determined:

− for disciplines with a form of exam, the final grade is the amount of all points received during the current control and the exam grade.

During the teaching of the course, the following control measures are used:

Current control: defense of laboratory works (38 points), written control works (22 points).

Semester control: Grading including Exam (40 points).

More detailed information on the assessment system is provided in technological card of the course.

An example of an exam card and assessment criteria

An example of an examination ticket

SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS
The second (master's) level of higher education
Specialty 126 "Information systems and technologies"
Educational program "Information systems and technologies".
Semester II
Course "Computer information systems in the organization of work of IT enterprises"

EXAMINATION TICKET 1

Task 1 (diagnostic, 17 points) . Build a context diagram and a diagram of the 1st level of decomposition in the IDEF0 standard for a business process [individual option]. When modeling, use the Ramus software product Educational.

Task 2 (heuristic, 23 points). Using the Microsoft Project (MS Project) or GanttPRO package , create a work schedule for the project "Creating a business in the field of information technologies". For this, it is necessary to go through the following stages:

1. Create a project calendar, based on the fact that the duration of the project is 1 calendar year, the work schedule is normal (5 working days and 2 weekend (Saturday and Sunday) days).

2. Structure the project by defining the logical sequence of stages (total tasks), as well as tasks within each stage. Stages of the project (total tasks): Implementation of the IT project; Justification of the business idea and concept of IT business organization; Development of a business plan; Preparatory stage of IT project implementation .

3. For each stage (total task), propose subtasks .

4. Define control tasks (project milestones) for each stage.

5. Distribute duties and responsibilities for certain project tasks among project participants: director; project manager; HR; marketer; developer; tester .

6. Establish a certain sequence of task performance and connections between them.

7. Set the basic project plan and take screenshots of the project and save them in an MS Word document.

Protocol No. 1 of August 27, 2024 was approved at the meeting of the Information Systems Department.

Examiner   Olena PLOKHA
Head of IS Department   Dmytro BONDARENKO

Evaluation criteria

The exam ticket includes one diagnostic task and one heuristic task. Software products such as Ramus are used in the process of performing exam tasks Educational – for developing business process models in IDEF0 standards. The maximum number is 40 points; the minimum that is counted is 25 points. At the same time, for completely correctly completed tasks, the student receives:
Task 1 – 17 points;
Task 2 – 23 points .
The final scores for the exam consist of the sum of points for the completion of all tasks, rounded to a whole number according to the rules of mathematics.
Task 1 (diagnostic) is estimated at *17 points* as follows:
7 points – correct and complete construction of the context diagram in the IDEF0 standard;
10 points – correct construction of the diagram of the first level of decomposition (definition of functional blocks and interface arcs).
In the event that the parts of the task described above are not fully completed, 0.5 points are deducted from the maximum score . Also, 1 point is deducted for each group of homogeneous non-essential errors (for example, incorrect definition of the source information for the work, lack of all necessary data stores for the task, presence of external links at those levels where they should not be, etc.); 1.5 points are deducted for each group of homogeneous significant errors (for example, incorrect wording of the name of the business process, lack of names of data streams, complete lack of decomposition of data stores at some levels, incorrect from the point of view of the methodology of the location of interface arcs according to the DEF0 standard, etc.) .
Task 2 (heuristic) is estimated at *23 points* as follows:
2 points – the project calendar is created according to the task;
6 points – the structure of the project (total tasks) is defined in a logical sequence;
7 points – for each stage (total task), propose subtasks (2-3) that reveal the essence of the total task;
4 points – control tasks (project milestones) are defined for each stage;
4 points – duties and responsibilities for certain project tasks are distributed among the project participants

In the event that the parts of the task described above are not fully completed, 0.5 points are deducted from the maximum score . Also, 1 point is deducted for each group of homogeneous non-essential errors (for example, incorrect definition of the source information for the work, lack of all necessary data stores for the task, presence of external links at those levels where they should not be, etc.); 1.5 points are deducted for each group of homogeneous significant errors (for example, incorrect wording of the name of the business process, lack of names of data streams, complete lack of decomposition of data stores at some levels, incorrect from the point of view of the methodology of the location of interface arcs according to the DEF0 standard, etc.) .

RECOMMENDED LITERATURE

Main

1. Osterwalder A. Value Proposition Design / A. Osterwalder, Y. Pigneur, A. Smith, G. Bernarda, P. Papadakos. – New Jersey, IL, USA: John Wiley & Sons Inc., 2019. – 320 p.

2. Costa A., Ferreira, C., Bento E., Aparicio F. (2018). Enterprise resource planning adoption and satisfaction determinants. Computers in Human Behavior. 63: 659–671. doi:10.1016/j.chb.2016.05.090. hdl:10071/12282

3. Сучасні інформаційні технології і системи: монографія / В. П. Бурдаєв, Н. Г. Аксак, М. В. Кушнарьов та ін.; за заг. ред . В. С. Пономаренка. – Харків: Вид. "Стиль-іздат", 2021. – 182 с. – URL: http://repository.hneu.edu.ua/handle/123456789/29233

Additional

4. Asaul A., Voynarenko M., Dzhulii L., Yemchuk L., Skorobohata L. and Mykoliuk O. The Latest Information Systems in the Enterprise Management and Trends in their Development. 9th International Conference on Advanced Computer Information Technologies (ACIT), Ceske Budejovice, Czech Republic, 2019, pp. 409-412, DOI: 10.1109/ACITT.2019.8779874

5. Bland D.J. Testing Business Ideas: A Field Guide for Rapid Experimentation / Bland D.J., A. Osterwalder. – New Jersey, IL, USA: John Wiley & Sons Inc., 2019. – 3368 p.

6. Levytska I.V., Klymchuk A.O., Klymchuk O.V. Functions of salary at machine-building enterprises in formation of motives and stimules of personnel. Bulletin of Zaporizhzhia National University. Economic sciences. № 4 (44), 2019. Pp. 154-159. DOI https://doi.org/10.26661/2414-0287-2019-4-44-24

7. Manzhura, O. V., Kraus, N. M. and Kraus, K. M. (2019), "Diagnosis of the impact of research and innovation on technology transfer in Ukraine", Efectyvna ekonomika, [Online], vol. 2, available at: http://www.economy.nayka.com.ua/?op=1&z=6873

8. Plokha O. Using web-based management system for successful managing of the international projects / O. Plokha, S. Znakhur // Збірник наукових праць

«Системи обробки інформації». – випуск 2(148). – 2017. – С. 181-187. – URL: http://www.repository.hneu.edu.ua/jspui/handle/123456789/16341

9. The Design Thinking Playbook: Mindful Digital Transformation of Teams, Products, Services, Businesses and Ecosystems . – New Jersey, IL, USA: John Wiley & Sons Inc., 2018. – 353 p.

10. Інформаційні системи і технології в управлінні. Конспект лекцій. – Вінниця: ДонНУ імені Василя Стуса, 2021. – 160 с.

11. Котлубай В. О. Інноваційне підприємництво та управління стартап проектами. Economic evaluation of innovative solution : практикум / В. О. Котлубай, Г. А. Отливанська. – Одеса: НУ "ОЮА", 2021. – 131 с.

12. Плоха О. Удосконалення бізнес-процесу продажів на основі впровадження CRM системи / О. Плоха, І. Владико // Матеріали Міжнародної науково-практичної конференції "Інформаційні технології та системи": тези доповідей, 14 - 15 квітня 2022 р. – Х.: ХНЕУ імені Семена Кузнеця, 2022. – С.16.– URL: http://repository.hneu.edu.ua/handle/123456789/27149

13. Плоха О.Б. Case Study: Розробка концепції корпоративного web-порталу банку" Credit Agricole"/О.Б. Плоха, І.О. Золотарьова, Г.О. Плеханова // Вісник Національного технічного університету «ХПІ». Серія: Системний аналіз, управління та інформаційні технології. – № 22. – 2018. – URL: http://repository.hneu.edu.ua/handle/123456789/20829

Information resources

14. Закон України «Про інноваційну діяльність». [Електронний ресурс]. – Режим доступу : http://zakon4.rada.gov.ua/laws/show/40-15.

15. Закон України «Про пріоритетні напрями інноваційної діяльності в Україні. [Електронний ресурс]. – Режим доступу : http://zakon4.rada.gov.ua/laws/show/3715-17

16. Плоха О.Б. Комп'ютерні інформаційні системи в організації роботи ІТ-підприємств [Електронний ресурс]. – Режим доступу: https://pns.hneu.edu.ua/course/view.php?id=3929