МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ
ІМЕНІ СЕМЕНА КУЗНЕЦЯ

ЗАТВЕРДЖЕНО
на засіданні кафедри
інформаційних систем
Протокол № 1 від 22.08.2023 р.

ПОГОДЖЕНО
Проректор з навчально-методичної роботи

_____ Каріна НЕМАШКАЛО

ІНФОРМАЦІЙНІ СИСТЕМИ В ЛОГІСТИЦІ

робоча програма навчальної дисципліни (РПНД)

Галузь знань	**07 "Управління та адміністрування"**
Спеціальність	**073 "Менеджмент"**
Освітній рівень	**перший (бакалаврський)**
Освітня програма	**"Логістика"**

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

Розробник:
ст. викладач _____ Людмила ЗНАХУР

Завідувач кафедри
інформаційних систем _____ Дмитро БОНДАРЕНКО

Гарант програми _____ Тетяна КОЛОДІЗЄВА

Харків
2024

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS

APPROVED
at the meeting of the department
information system
Protocol №1 of 22.08.2023

AGREED
Vice-rector for educational and methodical work

_____ Karina NEMASHKALO

INFORMATION SYSTEMS IN LOGISTICS

Program of the course

Field of knowledge	**07 "Management and administration"**
Specialty	**073 "Management"**
Study cycle	**first (bachelor)**
Study programme	**"Logistics"**

Course status	**Elective**
Language	**English**

Developer:
lecturer _____ Lyudmila ZNAKHUR

Head of information system
Department _____ Dmytro BONDARENKO

Head of Study Programme _____ Tatiana KOLODIZEVA

Kharkiv
2024

INTRODUCTION

Information systems becomes a key factor in the effective management of logistics processes. A specialist in logistics must have deep knowledge and skills in a number of key areas to effectively manage logistics processes. These skills and knowledge will help a specialist in the field of logistics to effectively solve tasks and optimize logistics processes in the company. The discipline "Information systems in logistics" provides students with the necessary knowledge and practical skills for successful work in the field of logistics, where high competition and the need for fast and innovative solutions become decisive. Within the framework of the discipline, modern trends, technological challenges and opportunities for the implementation of information systems for the optimization of logistics business processes are considered.

The goal of the course " Information systems in logistics " is the formation of a system of theoretical knowledge and the acquisition of practical abilities and skills in the issues of the basics of building information systems, company management, information and software support of logistics centers, management and use of modern information systems and technologies in logistics.

The main tasks of studying an course are mastering the basic terms of the discipline; study of the principles of functioning of the organization's logistics systems, their structure; understanding the specifics of a logistics company and the functioning of transport, warehouse, production, purchasing, and distribution logistics; mastering the basics of managing the company's material flows and planning the necessary resources.

The object of the educational discipline is a process approach, automation and informatization based on modern technologies of transport, warehouse, production, procurement and distribution logistics.

The subject of the course is the study of functions of information systems in logistics processes and optimization of transport routes .

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	Competencies
LO 5	GC3, GC5, SC7
LO 6	GC5, GC8, SC17
LO 11	GC3, GC4, GC8, GC11, SC19
LO 18	SC18

LO 19	GC5, GC8, GC11, SC17

where, LO5. Describe the content of the functional areas of the organization.

LO6. Demonstrate the skills of searching, collecting and analyzing information, calculating indicators to substantiate management decisions.

LO11. Demonstrate skills in situation analysis and communication in various areas of the organization.

LO18. Use the principles and methods of logistics in the general management system of the enterprise to reduce costs and optimize logistics flows and processes of organizations.

LO19. To apply a logistic approach to the management of organizations' resources and to ensure an increase in their competitiveness. Demonstrate skills in optimizing the organizational and technological aspects of the main functions of logistics using communication and information support.

GC3. Ability to abstract thinking, analysis, synthesis.

GC4. Ability to apply knowledge in practical situations.

GC5. Knowledge and understanding of the subject area and understanding of professional activity.

GC8. Skills in using information and communication technologies.

GC11. Ability to adapt and act in a new situation.

SC7. Ability to choose and use modern management tools.

SC17. The ability to carry out organizational, technological, technical and information support of the basic functions of logistics. The ability to manage the logistics activities of enterprises in the areas of production, stocks, warehousing, procurement, sales, transportation and cargo processing.

SC18. Ability to develop a logistics service system, logistics service strategy. Ability to organize logistics service for consumers and manage orders in the logistics service system. Ability to form a logistics service system and service quality system.

SC19. The ability to analyze the infrastructure of the commodity market and shape the behavior of the enterprise in the conditions of a specific infrastructure of the commodity market, to identify goods at all stages of commodity movement, to determine their main consumer properties and to maintain the quality of goods in logistics processes.

COURSE CONTENT

Content module 1. Basics of building information systems in logistics

Topic 1. Information systems and their role in the management of logistics companies

1.1. Concept of management and information system.

1.2. Definition of logistics and its role in the modern business environment.

1.3. Peculiarities of management of logistics companies

1.4. Definition and tasks of the logistics system

1.5. The concept of logistics processes, functions and logistics operations.

Topic 2. Information resources of the company

2.1. Definition and description of information resources of the company.

2.2. Categories of information resources.

2.3. Management of information resources.

Topic 3. Classification of the organization's automated information systems

3.1. General IS architecture.

3.2. Composition and structure of IS.

3.3. IS classification.

Topic 4. Purpose, structure and functionality of logistics IS

4.1. Structure IC logistics

4.2. Logistics IS subsystems that perform basic logistics functions.

4.3. IC logistics subsystems that perform logistics functions.

Topic 5. Process approach to the development of IS in logistics

5.1. Definition of the concept of the IS logistics life cycle

5.2. Stages of the IS logistics life cycle.

5.3. Requirements for the development of logistics IS.

Content module 2. Use of information systems and technologies in logistics

Topic 6. CRM systems, their purpose and functionality

6.1. Definition of CRM (Customer Relationship Management) basic concepts in the field of customer interaction management.

6.2. Basic functions of CRM.

6.3. Types of CRM systems.

6.4. Integration with other systems.

6.5. Examples of successful CRM implementation.

Topic 7. OMS systems, their purpose and functionality

7.1. Definition of OMS (Order Management System)

7.2. The main stages of order management.

7.3. Order management technologies and tools.

7.4. Integration with other systems.

7.5. Examples of successful implementation of the order management system

Topic 8. SCM systems, their purpose and functionality

8.1. Definition of SCM (Supply Chain Management), basic concepts in supply chain management.

8.2. The main components of SCM.

8.3. SCM technologies and tools.

8.4. Innovation in SCM.

8.5. Examples of successful implementation of the SCM strategy.

8.6. Prospects for the development of SCM in the future.

Topic 9. WMS systems, their purpose and functionality

9.1. Definition of WMS (Warehouse Management System) and its role in logistics.

9.2. Basic Functions of WMS.

9.3. WMS technologies and automation.
9.4. Integration of WMS with other systems of the organization.
9.5. Success stories and examples of WMS implementation.

Topic 10. Automation of transport logistics

10.1. Definition of TMS (Transport management system) Basic concepts of transport logistics.
10.2. Functional capabilities of the TMS system.
10.3. Problems of transport companies.
10.4. Advantages of automation of transport logistics.
10.5. Success stories and examples of software products for the automation of transport logistics

Topic 11. Modern information technologies in the management of logistics business processes:

11.1. Overview of modern information technologies in logistics.
11.2. Big data and analytics in logistics systems.
11.3. Tracking and monitoring technologies in logistics systems.
11.4. Examples of successful implementation of complex IT solutions in logistics.

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

Table 2

The list of laboratory studies

Name of the topic and / or task	Content
Topic 1-2. Task 1.	Description of business processes of a logistics organization. Implementation in Confluence
Topic 3-4. Task 2.	Development and filling of document templates for logistics companies. Implementation in Confluence
Topic 5. Task 3.	Determination of functional and non-functional requirements for the logistics system. Implementation in Confluence
Topic 6. Task 4	Using Zoho CRM to manage customer interactions
Topic 7-10. Task 5.	Basics of work in the ANT Logistics system. Registration in the system. Profile settings.
Topic 7-10. Task 5.	Automation systems of transport logistics Filling out directories (machines, warehouses, retail outlets)
Topic 7-10. Task 6.	Automation systems of transport logistics. Creating an application. Creation of transportation routes

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

Table 3

List of self-studies

Name of the topic and / or task	Content
Topic 1 - 11	Studying lecture material
Topic 1 - 11	Preparation for laboratory classes
Topic 1 - 11	Preparation for current control works
Topic 1 - 11	Preparation for the exam

The number of hours of lectures, laboratory classes, and hours of independent work is given in the technological card of the course..

TEACHING METHODS

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

Verbal (lecture-discussion (Topic 1–11), small group work (Topic 6, Topic 8), provocative lecture (Topic 1)).

Visual (demonstration (Topic 1–11)).

Practical (laboratory work (Topic 1–10), case studies (Topic 8-9).

ASSESSMENT FORMS AND METHODS

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

Current control is carried out during lectures, laboratory 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 an exam.

Semester control is conducted in the form of a semester exam (exam). The semester exam (exam) is taken during the exam session.

The maximum number of points that a student of higher education can receive during the examination (examination) is 40 points. The minimum amount for which the exam is considered passed is 25 points.

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 work (50 points), written control work (10 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

Semyon Kuznets Kharkiv National University of Economics
First (bachelor) level of higher education
"Management" specialty
Study program "Logistics"
Semester V
Course "Information systems in logistics"

EXAMINATION TICKET 1

TASK 1 (diagnostic, 8 points).
Explain what information support of the logistics process includes .
TASK 2 (diagnostic, 8 points).
What are the requirements for automated information systems?
TASK 3 (heuristic, 24 points).
Create routes for the delivery of goods from the warehouse to points of sale in the retail system. The task must be completed in the TMS ANT-Logistics system.

1. Fill out the directories
   1.1. Cars (fill in information about vehicles: name, type of car, load capacity, average speed, start and end of work)
   1.2. Retail outlets (fill in information about retail outlets: name, address, start and end of work, unloading time. Fill in tabs: general, contacts, work schedule).
   1.3. Warehouses (fill in the tabs: general, contacts, working hours).
2. Create a document "Application" for the delivery of goods.
3. Based on the "Applications", create a "Route" document for the delivery of goods from the warehouse to the points of sale in retail trade. Create a route list for the driver

Output data for the task:

Applications	Routes	Warehouses	Cars	Trading points
12.03.2024	21.03.2024	2	2	6
14.03.2024	23.03.2024	3	2	7

Add screenshots of completed directories, applications, generated routes, route list to the report.

Approved at the meeting of the Department of Information Systems No. ____ of "___"_____20___.

Examiner Lyudmila ZNAKHUR

Head of Department, Phd Dmytro BONDARENKO

Evaluation criteria

Final scores for the exam consist of the sum of points for each task.

The algorithm for solving each task includes separate stages that differ in complexity, time-consumingness, and importance for solving the task. Therefore, individual tasks and stages of their solution are evaluated separately from each other as follows :

Task 1 (diagnostic, 8 points)

This task is evaluated from 0 to 8 points according to the following criteria:

8 points. The theoretical question is described in full, with a statement of the conclusions obtained on the basis of the program, additional material, legislative acts and regulatory documents. Conclusions to the theoretical question are reasoned and substantiated.

7 points. The theoretical question is described in full, the material is presented in accordance with the program material of the discipline. When performing the comparison, in-depth knowledge of the material provided by the curriculum is used. However, the student assumes certain inaccuracies.

6 points. The theoretical question is fully disclosed, the program material is presented in accordance with the material of the discipline. When completing the task, the student applies the basic knowledge of the educational material provided by the curriculum. The comparison is generally performed correctly, while the student makes some minor errors.

5 points. The theoretical question is fully disclosed, but minor mistakes were made in the presentation of the material. The student applies the basic knowledge of the educational material provided by the curriculum. When performing it, the student makes minor mistakes.

4 points. The theoretical question is incompletely disclosed, with significant errors. When performing a theoretical task, the student applies the educational material without sufficient understanding, makes a significant number of mistakes, faces significant difficulties in analyzing and interpreting situations.

3 points. The theoretical question is incompletely disclosed or not disclosed at all. When completing the task, the student makes quite a large number of gross mistakes, faces significant difficulties in analyzing and interpreting situations, and shows the ability to express an opinion at an elementary level.

2 points. The student cannot explain a theoretical question, faces significant difficulties in analyzing and interpreting the situation, shows the ability to express an opinion at an elementary level. The theoretical question is not disclosed.

1 point The student cannot explain a theoretical question, he faces significant difficulties in analyzing and interpreting the situation. The theoretical question is not disclosed.

0 points are given for an uncompleted task at all.

.***Task 2*** . ***(diagnostic, 8 points)***

This task is evaluated from 0 to 8 points according to the following criteria:

8 points. The theoretical question is described in full, with a statement of the conclusions obtained on the basis of the program, additional material, legislative acts and regulatory documents. Conclusions to the theoretical question are reasoned and substantiated.

7 points. The theoretical question is described in full, the material is presented in accordance with the program material of the discipline. When performing the comparison, in-depth knowledge of the material provided by the curriculum is used. However, the student assumes certain inaccuracies.

6 points. The theoretical question is fully disclosed, the program material is presented in accordance with the material of the discipline. When completing the task, the student applies the basic knowledge of the educational material provided by the curriculum. The comparison is generally performed correctly, while the student makes some minor errors.

5 points. The theoretical question is fully disclosed, but minor mistakes were made in the presentation of the material. The student applies the basic knowledge of the educational material provided by the curriculum. When performing it, the student makes minor mistakes.

4 points. The theoretical question is incompletely disclosed, with significant errors. When performing a theoretical task, the student applies the educational material without sufficient understanding, makes a significant number of mistakes, faces significant difficulties in analyzing and interpreting situations.

3 points. The theoretical question is incompletely disclosed or not disclosed at all. When completing the task, the student makes quite a large number of gross mistakes, faces significant difficulties in analyzing and interpreting situations, and shows the ability to express an opinion at an elementary level.

2 points. The student cannot explain a theoretical question, faces significant difficulties in analyzing and interpreting the situation, shows the ability to express an opinion at an elementary level. The theoretical question is not disclosed.

1 point The student cannot explain a theoretical question, he faces significant difficulties in analyzing and interpreting the situation. The theoretical question is not disclosed.

0 points are given for an uncompleted task at all.

Task 3. (heuristic, 24 points).

This task is evaluated on a 24-point scale.

The first task is evaluated from 0 to 12 points according to the following criteria:

12 points . The task was completed in full accordance with the individual task.

0 points. Task not completed

In the event that the task is completed in full, but mistakes were made during its execution, a part of the points proportional to the completed in the examination paper is deducted from the maximum score for the task, namely:

for each insignificant error, up to 0.5 points are deducted, but no more than 1.5 points for each group of homogeneous insignificant errors;

up to 2 points are deducted for each group of homogeneous significant errors (for example, the absence of filled-in reference book elements, etc.).

The second task is evaluated from 0 to 6 points according to the following criteria:

6 points. The task was completed in full accordance with the individual task.

0 points. Task not completed

In the event that the task is completed in full, but mistakes were made during its execution, a part of the points proportional to the completed in the examination paper is deducted from the maximum score for the task, namely:

for each insignificant error, up to 0.5 points are deducted, but no more than 1.5 points for each group of homogeneous insignificant errors;

up to 2 points are deducted for each group of homogeneous significant errors.

The third task is evaluated from 0 to 6 points according to the following criteria:

6 points . Correct creation of routes (in accordance with the task)

0 points. The task was not completed or was completed incorrectly

In the event that the task is completed in full, but mistakes were made during its execution, a part of the points proportional to the completed task in the examination work (for example, missing detail for each route) is deducted from the maximum score for the task, up to 0.5 points.

RECOMMENDED LITERATURE

Main

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