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LOGISTICS

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LOGISTICS:
Guide to Practical Classes and Homework Guidelines for students of specialty 073 “Management”

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The guidelines contain plans of practical classes, key words and questions for self-examination due to the topics of the subject, as well as requirements for homework. Described in detail tips for student's self-studying, evaluation criteria homework, and a list of recommended references.

For students in the field of knowledge 07 "Management and Administration" specialty 073 "Management" of all forms of education.

INTRODUCTION

The subject "Logistics" is considered a theoretical and practical basis of knowledge and skills that form the expert's profile in the field of logistics.

The main purpose of teaching this subject is to create for future specialists the system knowledge and understanding of the logistics conceptual foundations, theory and practice of logistics development as a modern concept of effective management of economic systems, and acquiring skills of practical use of modern methods and tools of logistics management of flow processes in the conditions of integration and globalization of the economy.

Objectives to study this subject are:

- formation of a systematic understanding of the essence of logistics as a modern concept of crisis management and a tool for ensuring the competitiveness of individual economic entities, as well as entire supply chains;
- acquisition and systematization of knowledge about the essence of the interaction of logistics concepts, technologies, and systems;
- mastering the peculiarities of the system and operational approaches in logistics;
- mastering the methodical tools for making optimal managerial decisions in various functional areas of logistics;
- mastering the skills of logistics thinking and developing proposals for improving logistics systems and mechanisms for its functioning;
- acquisition skills for assessing the economic efficiency of logistics solutions and the implications of logistics solutions.

SUBJECT CONTENT

CHAPTER 1. CONCEPTUAL FOUNDATIONS OF LOGISTICS AND TRENDS OF ITS DEVELOPMENT

Practical Classes 1.
LOGISTICS: THE ESSENCE AND BASIC CHARACTERISTICS

***Purpose of the lesson*:** to consolidate knowledge about the essence of different views on the definition of "logistics", the basic principles, functions, and types of logistics, as well as to study the logistics tendencies of the foreign country's development.

As a result of this subject mastering a student should:

- ***know:*** different views on determining the essence of logistics; the purpose and tasks of logistics; a subject, objects and subjects of logistics; basic principles, functions and types of logistics; the essence of logistics mix "8R";
- ***be able to:*** critically analyze the problems of the logistics terminology development; generalize the global experience of logistics development and use its best practice in Ukrainian realities; identify current trends in logistics development; substantiate the strategic role of logistics in the global economy.

Keywords: logistics, purpose of logistics, functions of logistics, principles of logistics, logistics mission, logistics mix.

Questions for self-testing

1. *A retrospective view of the evolution and paradigm of logistics development.*
2. *History of the logistics development as a business concept.*
3. *Logistics as a modern management concept and a market economy instrument.*
4. *Potential of logistics. Concept and main tasks of logistics.*
5. *Strategic trends of logistics development in the context of modern challenges of a market economy.*
6. *Experience and prospects of logistics development in the world and in Ukraine.*

Practical Classes 2.
FLOW PROCESSES IN LOGISTICS AND THEIR OPERATIONAL DECOMPOSITION. LOGISTICS SYSTEMS AND ITS FEATURES AS AN OBJECT OF MANAGEMENT

Purpose of the lesson: to consolidate knowledge about the essence of flow processes in logistics, basic principles, connections and properties of logistics systems.

As a result of this subject mastering a student should:

- ***know:*** the essence, indicators and classification of material flows; essential characteristics, classification features and types of informational, financial and service flows in logistics; criteria for optimal management of integrated logistics flows; operational decomposition method of the logistics process; logistics systems essential properties of structuring and classification; the essence of logistics operations and its classification; criteria and approaches to assessing the efficiency of logistics systems functioning.
- ***be able to:*** develop patterns of interaction and integration of logistics flows; carry out operational decomposition of the logistics process; determine the type and optimal structure of the logistics system; establish rational connections between elements of the logistics system; evaluate the logistics systems effectiveness.

Keywords: material flow, financial flow, informational flow, service flow, logistics service, logistics operation, logistics process, logistics activity, operational decomposition, logistics system.

Questions for self-testing

1. *Organizational features of flow processes in logistics.*
2. *Classification of logistics flows.*
3. *The infrastructure of logistics processes.*
4. *Integrated logistics flows and criteria for optimal management.*
5. *Logistics operations, its classification and operational decomposition methods of the logistics process.*
6. *Decision-making tools in the logistics processes management.*
7. *Essential properties of logistics systems.*
8. *Principal institutional classification of logistics systems.*
9. *Criteria and approaches to assessing the efficiency of logistics systems operation.*
10. *Fundamentals of price policy in logistics systems.*

Practical Classes 3.
LOGISTICS CONCEPTS AND TECHNOLOGIES. STRUCTURE AND DEVELOPMENT TRENDS OF LOGISTICS SERVICES MARKET

***Purpose of the lesson*:** to consolidate knowledge about the essence of basic logistics concepts; to clearly understand the relationship that exists between logistics concepts, technologies and systems; to characterize the state, structure and current trends of the market for logistics services in Ukraine and in the world.

As a result of this subject mastering a student should:

- ***know:*** logistics concepts underlying the construction of logistics "push-system" type; logistics concepts underlying the construction of logistics "pull-system" type; the essence and evolution of the RRP concept (Requirements / resource planning); the essence of the "Materials resource planning" concept (MRP) and the "Distribution resource planning" concept (DRP); the essence of the "Just-in-time" concept (JIT) and KANBAN; the essence of the "Lean production" concept (LP); the essence of the "Total Quality Management" concept (TQM); the essence of the "Demand-driven techniques" concept (DDT); the essence of the "Supply Chain Management" concept (SCM); features of the relationship between logistics concepts, technologies and systems; classification features of the logistics providers, the essence of logistics outsourcing, types of logistics services.
- ***be able to:*** analyze the state and identify development trends in the logistics services market; carry out the segmentation of the logistics services market; evaluate the risks and benefits of logistics outsourcing; distinguish the types of logistics providers; identify and solve the problems of outsourcing and insourcing.

Keywords: MRP (Materials resource planning), JIT (Just-in-time), DRP (Distribution resource planning), LP (Lean production), TQM (Total Quality Management), integrated logistics, Supply Chain Management, logistics provider, logistics outsourcing, logistics insourcing.

Questions for self-testing

1. The essence and interconnection between logistics concepts, logistics technologies and logistics systems.

2. Features of the production processes management based on the logistics principles.

3. Logistics systems of "pull" and "push" type: advantages and

disadvantages.

4. The essence and evolution of the logistics "Materials resource planning" concept (MRP).

5. "Distribution resource planning" concept (DRP).

6. A delivery organization based on the principles of "just-in-time" (JIT).

7. Organization of the enterprise activity according to the principles of the "Lean production" concept.

8. Total Quality Management (TQM).

9. The concept of "Demand-driven techniques" (DDT).

10. The concept of Integrated Logistics (SCM). General principles of integrated supply chain management.

11. Comparative analysis of internal logistics systems.

CHAPTER 2. FUNCTIONAL LOGISTICS SUBSYSTEMS AND INTEGRATED LOGISTICS

Practical Classes 4.
LOGISTICS OF SUPPLY, PROCUREMENT AND PLACEMENT OF ORDERS. PRODUCTION LOGISTICS

***Purpose of the lesson*:** to consolidate knowledge about the essence of supply logistics, production logistics, procurement (purchasing) logistics. Determine the effectiveness of logistics in material flow management during supply and production.

As a result of this subject mastering a student should:

- ***know:*** the essence and tasks of purchase logistics; the essence and tasks of supply logistics; the essence of order management; purpose, tasks and functions of production logistics; the essence of "push" and "pull" systems of material flow management in production.
- ***be able to:*** solve practical problems to determine material requirements; define the criteria and use effective methods of selecting suppliers; calculate the order optimal size; use the internal logistics concepts in practical enterprises activity.

Keywords: supply logistics, procurement logistics, order management, economic order quantity (EOQ), production logistics, logistics push-systems, logistics pull-systems.

Questions for self-testing

1. *Purpose, objectives and basic principles of supply logistics.*
2. *The main functions of logistics management in the organization of procurement. Criteria and methods for selecting suppliers.*
3. *Organization of interaction with the supplier. Order management.*
4. *Method of determining the optimal conditions of supply.*
5. *Purpose, tasks and functions of production logistics.*
6. *"Push" and "pull" systems for material flow management in the production logistics.*
7. *Internal logistics systems: KANBAN, MRP-1; MRP-2; MRP-3; ERP; OPT and etc.*
8. *Use of the Lean Production concept in the production activities of Toyota.*
9. *The efficiency of the logistics in the process of material flow management in the workplace.*
10. *Innovations in the production logistics.*

Practical Classes 5.
DISTRIBUTION LOGISTICS. WAREHOUSE LOGISTICS

***Purpose of the lesson*:** to consolidate knowledge about the essence of distribution logistics, methods of determining the optimal location of distribution centers in the business environment, the principles of warehouse logistics and organization of logistics process in the warehouse.

As a result of this subject mastering a student should:

know: the essence, tasks and functions of distribution logistics; structure and principles of the logistics distribution channels functioning; the essence and role of logistics intermediaries in distribution, classification and functions; the essence, types and functions of warehouses in the logistics system; modern warehouse management systems (WMS); the essence of distribution centers in logistics activities.

be able to: understand logistics concepts and systems in the field of product distribution; understand the parameters and principles of the warehouse efficient functioning; use typical logistics solutions for optimizing the warehouse subsystem; evaluate the advantages and disadvantages of introducing the latest technologies in warehouse logistics.

Keywords: distribution logistics, distribution, logistics channel, logistics chain, logistics network, distribution system, distribution channel, logistics intermediary, dealer, distributor, commissioner, agent, broker, warehouse logistics, warehouse, warehouse system, distribution center, cargo unit.

Questions for self-testing

1. *Purpose, tasks and functions of distribution logistics.*
2. *Structure, principles of functioning and criteria for selecting logistics distribution channels.*
3. *Logistics intermediaries in distribution, classification and functions. Coordination and integration of logistics intermediaries.*
4. *Principles and methods of determining the location of distribution centers in the logistics environment.*
5. *Logistics concepts and systems in the field of goods distribution: DRP, DDT, QR, CPR, ECR, etc.*
6. *Construction of distribution and distribution network. The efficiency of logistics in the material flow management in the sphere of its circulation.*
7. *Types and functions of warehouses in the logistics system. The role and place of warehouses in logistics chains.*
8. *The choice between own warehouse and warehouse of general use. Organization of the logistics process in the warehouse.*
9. *Parameters and principles of the warehouse effective functioning. Typical logistics solutions for optimizing warehouse subsystem.*
10. *WMS system in the management of warehousing operations.*
11. *The role of packaging in reducing logistics costs.*
12. *New technologies in warehouse logistics.*

Practical Classes 6.
INVENTORY LOGISTICS. TRANSPORT LOGISTICS

***Purpose of the lesson*:** to consolidate knowledge about the essence of inventory management and the main tasks of transport logistics in the logistics system of the enterprise.

As a result of this subject mastering a student should:

- ***know:*** the essence, task, classification of inventories; the essence and features of modern inventory management systems; the essence of the ABC-XYZ analysis in the management of material stocks; the essence of the "Vendor management inventory" concept (VMI); the essence and tasks of

transport logistics; importance of modern transportation technologies; importance of modern telecommunication systems in freight transportation support.

- ***be able to:*** use the methods of ABC-analysis and XYZ-analysis in the inventory's management; understand the logistics characteristics and infrastructure of different modes of transport; use in practical methods of the optimal selecting of transportation and optimal carrier.

Keywords: inventory, material stock, inventory logistics, production inventory, current stocks, commodity stocks, insurance stocks, seasonal stocks, inventory management system, point of order, minimum inventory levels, maximum inventory levels, fixed-volume inventory management system, inventory management system with fixed ordering frequency, system with the established frequency of stocks replenishment to the established level, "maximum-minimum" inventory system, ABC-analysis, XYZ-analysis, transport logistics, transport inventory, unimodal transportation, intermodal transportation, multimodal transportation, transportation tariff, transport service.

Questions for self-testing

1. *Inventories: classification, place and role in the logistics system.*
2. *Types of inventory management systems.*
3. *The essence of the methods of ABC- and XYZ-analysis in the material stocks management.*
4. *The purpose and tasks of transport logistics.*
5. *Logistics characteristics and infrastructure of different modes of transport.*
6. *Freight forwarding support of logistics.*
7. *The essence of modal transportation.*
8. *Modern transportation technologies.*
9. *Methods of choosing the optimal mode of transportation and optimal carrier.*
10. *Modern telecommunication systems of freight transportation support.*
11. *Innovative solutions in the field of transport logistics.*

Practical Classes 7.
INFORMATION LOGISTICS. LOGISTICS APPROACH TO CUSTOMER SERVICE (SERVICE LOGISTICS)

***Purpose of the lesson*:** to consolidate knowledge about the information logistics, the formation of logistics service system, as well as to explore the parameters and characteristics of logistics services.

As a result of this subject mastering a student should:

- ***know:*** the essence, values and tasks of information logistics; types of information systems in logistics; the essence of electronic logistics and intelligent systems in logistics; the essence, meaning and types of logistics service, service response logistics (SRL); the essence of the logistics service quality; importance of the system "Key Performance Indicators" (KPI) for service logistics; methodology for assessing the consumer value of logistics services by the KANO method.
- ***be able to:*** use software for the adoption and support of logistics solutions; understand the technologies of automatic identification and bar-coding; understand the corporate information systems and electronic data interchange (EDI); use the criteria for logistics service quality; use methods to assess the level of logistics services.

Keywords: information logistics, information system, electronic logistics, bar-coding, automatic identification, electronic data interchange, corporate information systems, service logistics, service, service response logistics, logistics services, level of logistics services.

Questions for self-testing

1. *Information systems in logistics: types and characteristics.*
2. *Software for the adoption and support of logistics solutions.*
3. *Technologies of automatic identification and bar-coding in logistics.*
4. *Corporate Information Systems (CIS) and Electronic Data Interchange (EDI).*
5. *Application of information technology for processing customer orders.*
6. *Electronic logistics and intelligent logistics systems.*
7. *Electronic commerce in logistics.*
8. *Criteria for the logistics service quality. KPI-system of service logistics.*
9. *Methods for assessing the level of logistics service. Service response logistics.*
10. *Choosing a strategy to achieve the optimal level of service.*

Practical Classes 8.
INTEGRATED LOGISTICS (SCM) AND EVALUATION OF ITS EFFECTIVENESS

***Purpose of the lesson*:** to consolidate knowledge about the essence of integrated logistics as the main factor of competitiveness in the conditions of the economic globalization.

As a result of this subject mastering a student should:

- ***know:*** the essence and tasks of integrated logistics; the essence of the logistics concept of minimizing total costs in the supply chain; the essence of functional and integral approaches to assessing the efficiency of logistics; criteria and indicators for assessing the effectiveness of integrated logistics.
- ***be able to:*** identify and calculate the main types of logistics costs; calculate the efficiency indicators of the integrated logistics; evaluate the logistics efficiency according to the international index "Logistics Performance Index" (LPI).

Keywords: integrated logistics, supply chain, logistics costs, economic globalization, international logistics, international intermediaries, LPI, integrated logistics efficiency.

Questions for self-testing

1. *The essence of the logistics concept of Supply Chain Management.*
2. *Modern trends in the development of logistics and SCM in the world.*
3. *The value of integrated logistics for Ukrainian enterprises.*
4. *The strategic role of logistics in reforming the economy of Ukraine.*
5. *Logistics infrastructure in Ukraine: components, problems, development trends.*
6. *Value and order of formation of LPI: constituent elements, place of Ukraine in the rating.*

ORGANIZATION OF THE HOMEWORK IMPLEMENTATION

The study time allotted for student's self-studying is determined by the curriculum and is not less than 1/3 and not more than 2/3 of the total amount of study time allotted for the study of a particular subject.

The main purpose of the student's self-studying is the formation of his cognitive activity, the acquisition of basic skills and abilities to work with educational materials, deepening and expanding the already acquired knowledge, increasing the level of organization of students, and more.

The content of the student's self-studying is determined by the curriculum of the subject, tasks, and recommendations of the teacher. The scope of the student's self-studying can go far beyond the curriculum if it interested him and he had a desire (need) to deepen and expand knowledge of this subject.

The students' self-studying of the course or its separate topics is preceded by review lectures, which consider the tasks and sequence of studying the course, the most important and problematic aspects of the subject, the peculiarities of their solution in modern conditions.

The students' self-studying in the process of studying the initial subject "Logistics" involves the preparation of the individual homework.

1. The purpose and task of the Homework

The homework (HW) of the subject "Logistics" is provided by the base of the educational and professional program and Bachelor Curriculum for Specialty 073 «Management».

The homework is complex, performed during the third semester and covers all the topics of the course. The homework is carried out in order to consolidate, systematize, generalize and deepen knowledge of logistics, promote autonomy in solving specific problems, develop skills for finding innovative logistics solutions and acquire practical skills in identifying logistics activities of the enterprise.

For the successful performance of HW student should:

know:

- the logistics terminology;
- basic principles of making logistics decisions;

be able to:

- use tabular and graphical methods for generalization and systematization of a large array of theoretical information from the conceptual foundations and functional areas of logistics;
- perform creative team logistics projects in the form of presentations in PowerPoint format;

– apply methodological tools for solving practical logistical problems;
– analyze the world and domestic experience of the practical use of logistic concepts and technologies;
– search the innovative solutions for standard logistics tasks.

Performance, formalization and defense of the HW student make individually in accordance with the methodological recommendations.

2. General requirements for content and protection of Homework

The work should have an individual character, but it must be clearly and logically structured. The constituent parts of it: title page, content, notation, symbols and abbreviations, logistics terms dictionary, introduction, main part, conclusions, references, appendixes (if necessary).

Completed Homework the student submits to a leading teacher to check and obtain the security clearance. The protection consists of a student's report and answers to the teacher's questions. In the report, the student should indicate the exact purpose of the Homework, its actuality, briefly highlight the contents of the homework from the subject, the results of the performance, as well as indicate the conclusions of the work.

3. Technical requirements for design of Homework

Homework must be printed on sheets of A4 size paper (210 × 297 mm) on one side of the page with the following requirements to the text: computer set – 14 pt, interval – 1,5, font – Times New Roman, alignment – the width of the sheet, paragraph – 10 mm. The density of the text should be the same throughout the entire work. The text of the homework is performed with the following sizes of fields: from the left – 20 mm, from the right – 10 mm, from the top – 20 mm, from below – 20 mm.

Titles of structural parts printed in capital letters symmetrically to the text (e.g. CONTENT, INTRODUCTION, THEORETICAL PART, RESEARCH AND ANALYTICAL PART, PRACTICAL PART, CONCLUSIONS, and REFERENCES). Each structural part of the work begins with a new page. The dot at the end of the header is not put.

The numbering of pages of text, sections, figures, tables, formulas is given in Arabic numerals without the “No” sign. The numbering of the pages of the text of the Homework begins with the title page, on which the number is not put. The page number is placed in the lower right corner starting with the second page.

Mathematical formulas should be thoroughly checked and clearly printed. The number of tables, formulas and illustrations should be minimal and relevant. Charts and diagrams must be executed in Microsoft Excel; formulas must be executed in Microsoft Equation 3.0.

References in the Homework are a prerequisite and make its necessary in the text in square brackets with the number of pages of the relevant source: for example, [3, p. 234] or [2, p. 35; 8, p. 234]. It is allowed to provide references in footnotes, and its design must correspond to the bibliographic description of the list of links with the indication of the number or the presentation of a footnote at the end of the sheet. References are made in the text, as soon as they are mentioned.

References should contain the entire list of sources used – electronic sources, literary works, books, brochures, materials of scientific conferences, legislative acts, at least 10-15 titles.

The list of used sources is provided at the end of the homework and should be made in accordance with the National Standard of Ukraine DSTU 8302:2015 "Information and documentation. Bibliographic link. General terms and conditions of drafting".

The appendix or appendixes (if necessary) - a reference or auxiliary material directly related to Homework. The attachment should have a headline printed in lowercase at the top of the first large symmetrically relative to the text of the page. In the middle of the line above the caption in lowercase letters the first-word "Appendix" is printed and the capitalization letter (for example, Appendix A).

Each appendix starts with a new page. The appendixes should be in sequence in capital letters of the English alphabet. In the case of transferring part of the appendix to the next sheet, write "Continuation of the app. A" on the right side and the name is not posted. On the last sheet, where the appendix is placed, should write "Ending the app. A" on the right side.

4. Short guidelines for the main part of the Homework

The specific goal of the Homework is to develop a portfolio of the subject "Logistics" and to form students' practical skills in managing information flows by locating, systematizing, structuring, organizing and visualizing lecture, practical material and additional logistics information in accordance with the subject curriculum.

Mandatory structural elements of the portfolio should be:

– dictionary of basic logistics terms (according to the subject syllabus) with obligatory references to the latest sources of information and authoritative publications;

– additional material on the main topics of the course, which is innovative and practical;

– a critical review of literary sources on problematic issues of logistics and issues addressed on the independent training of students;

– examples of innovative solutions to logistics problems in practice;

– characteristics of the newest services of logistics companies;

– presentation “Logistics yesterday, today and tomorrow: through the eyes of students” (team project);

– presentation “State and trends of the logistics services market in Ukraine or in any country in the world” (team project);

– presentation “Innovations in one of the functional areas of logistics” (individual project). The functional field of logistics (purchasing, transportation, warehouse, distribution, production, information, etc.) is chosen by the student independently;

– independently solved by the student the problem and practical situations in accordance with the subject program.

The portfolio of each student should consist of three parts: THEORETICAL PART (vocabulary of logistics terms, additional material on the topics of the subject), RESEARCH AND ANALYTICAL PART (analysis of the state and trends of the logistics services market in Ukraine and the world, innovations in logistics and examples of its implementation) and PRACTICAL PART (tasks)/

To cover theoretical part, the student should use various sources of information (Laws of Ukraine, Decrees of the Cabinet of Ministers of Ukraine, normative, statistical and analytical documents, textbooks, manuals, International standards on logistics, scientific publications, articles in business journals, Internet resource), obligatory referring to a portfolio for a specific source. The coverage of theoretical part should necessarily be accompanied by the use of graphical and tabular research methods that allow assessing the student's ability to systematize and structure educational, scientific and analytical material.

Task-solving should reflect the logical sequence of its solution and have an argumentative response. To solve a specific problem, the student should first study the theoretical material on the subject, record the condition of the problem, using the notations, and then clearly describe the sequence of actions to solve it. The answer to the results of the task should be the form of an argumentative management decision.

The contents of the portfolio and its design allow the teacher to evaluate the students’ independent work on specific subjects of the “Logistics” and draw conclusions about the level of preparation of students, the ability to work with special, methodological, references, the weak and strengths of the students' training. The preparation of the portfolio is aimed at forming a number of important professional competencies for future managers, in particular, the ability to work systematically and visualization skills and presentation of the results of its research.

The preliminary review of the portfolio based on the results of the 1st module allows the teacher to timely find mistakes made during the Homework assignment, indicate the student how to correct them, prevent them from repeating, and indicate which issues need to be finalized.

The portfolio should have a creative character, be clearly structured, and include examples of practical application of innovative solutions in the field of logistics in its various functional areas. At the end of the work, the student makes general conclusions of the whole Homework. This is the final part of the work, which should include the results of the theoretical and practical analysis.

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Н А В Ч А Л Ь Н Е В И Д А Н Н Я

РЕМИГА ЮЛІЯ СЕРГІЇВНА

ЛОГІСТИКА:
методичні рекомендації до практичних занять та самостійної роботи студентів спеціальності 073 «Менеджмент»

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