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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL AVIATION UNIVERSITY
Faculty of Transport, Management and Logistics
Logistics Department

AGREED

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« 20 » 11 2022

APPROVED

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« 14 » 12 2022



Quality Management System
COURSE TRAINING PROGRAM
on
“Logistics Audit”

Educational Professional Program: “Logistics”

Field of study: 07 «Management and Administration»

Specialty: 073 «Management»

Mode of study	Semester	Total (hours/ECTS credits)	Lectures	Practicals	Self-study	HW/CGP/C	TP/C Pr	Form of semester control
Full-time	1	120/4,0	17	17	86	-	-	Graded Test Is.

Index: CM-7-073-3/21-3.2

QMS NAU CTP 19.05-01-2022



The Course Training Program on “Logistics Audit” is developed on the basis of the Educational Professional Program “Logistics”, Master Curriculum № CM-7-073-3/21 and Master Extended Curriculum № ECM-7-073-3/22 for Specialty 073 “Management” and corresponding normative documents.

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INTRODUCTION

The Course Training Program on “Logistics Audit” is developed based on the "Methodical guidance for the subject Course Training Program", approved by the order № 249/од, of 29.04.2021 and corresponding normative documents.

1. EXPLANATORY NOTES

1.1. Place, objectives, tasks of the subject

Place of the academic subject in the system of professional training is determined by the need to form professional competencies and practical skills of conducting logistics audits of management systems and supply chains in future specialists. This educational subject is the theoretical and practical basis of the set of knowledge and skills that form the profile of a specialist in the field of management and administration.

The main target of the subject is the formation of knowledge, practical skills and professional competencies on the use of principles, standard procedures, methods and modern tools of logistics audit of micro- and macro-logistics systems to justify logistics management decisions to minimize total logistics costs and identify reserves to create additional consumer value (services) in supply chains that can become a competitive advantage of the company.

The objectives of the subject are:

- acquisition of theoretical knowledge on the methodology of logistics audit of logistics systems and integrated supply chains;
- formation of skills and abilities to define procedures, choose methods and modern tools for logistics audit of supply chains in accordance with international standards;
- formation of skills of using SCOR-model for the purposes of controlling and audit of the main processes in supply chains;
- acquisition of knowledge and skills of manifestation on the basis of logistical audit of "narrow powers" in the management of supply chains;
- formation of skills of practical application of procedures of carrying out of logistic audit on Logistics Field Audit technology;
- acquisition of knowledge and skills to identify sources of excess and hidden logistics costs and reserves to minimize total logistics costs in supply chains;
- acquisition of knowledge and skills on the methodology of audit of the supply chain management system according to values and key performance indicators of supply chains;
- formation of skills for conducting an audit of the state and structure of logistics infrastructure as a basis for determining innovative trends in its development at both micro and macro levels of logistics systems management;



– use of principles, procedures, methods and modern tools of logistics audit and certification of security of supply chains on the basis of international standards.

1.2. Learning outcomes the subject makes it possible to achieve

As a result of the study of the subject, the student must achieve the following **learning outcomes**:

- critically consider, select and use the necessary scientific, methodical and analytical tools for monitoring the state and audit of management systems in unpredictable conditions (LO 1);
- to carry out complex and detailed monitoring and audit of the state of the logistics system, during which measurements and analysis of primary and secondary information are carried out;
- to identify cause-and-effect relationships of logistics problems in the company;
- to make forecasts and calculations of the efficiency of the logistics system based on KPI indicators, develop concepts and strategies for radical improvements along with operational changes;
- to conduct an audit of the supply chain management system based on value benchmarks and supply chain performance indicators;
- to be able to use the methodological toolkit for the justification of strategic decisions regarding the management of logistics business processes and the formation of perfect and competitive supply chains based on the results of a logistics audit (LO 19).

Studying the subject will be a useful experience for those who plan to work both in domestic and international logistics companies and consulting companies in the field of logistics.

1.3. Competencies the subject makes it possible to acquire

As a result of studying the discipline the student must acquire the following **competencies**:

- ability to solve complex tasks and problems in the field of logistics business processes based on the results of their logistics audit;
- the ability to abstract thinking, analysis and synthesis (GC 7);
- ability to organize and conduct logistics audit of business processes, micro- and macro-logistics systems and integrated supply chains;
- ability to choose and use models, methods and technologies of logistics audit of management systems as a basis for making sound logistics decisions, including in accordance with the defined objectives and international standards of supply chain management;
- ability to timely diagnose possible risks and problems in the management of logistics systems, to identify reserves and opportunities for their improvement;



- ability to analyze and structure the problems of the organization, make effective management decisions and ensure their implementation;
- ability to develop, maintain and improve logistics systems management systems;
- ability to choose methods and tools of analysis and data processing in logistics;
- to identify risks of local and global supply chains, develop measures to prevent risky situations, implement international standards of security of supply chains;
- the ability to identify sources of losses and reserves to improve the efficiency of business processes in supply chains, taking into account the targets;
- ability to identify and solve problems related to the specifics of logistics activities of enterprises and organizations at the micro and macro levels of the economy, generate new ideas and scientifically substantiate logistics management decisions.

1.4. Interdisciplinary connections

Interdisciplinary connections: “Logistics Audit” complements the knowledge of such subjects as "Strategic Supply Chain Management", "Logistics Management" and “Business Analysis and Data Processing”, provides basic knowledge for studying subjects: "Financial Flows in Logistics Systems", "Risk Managements in Logistics", “Logistics Systems Design” and others.

2. COURSE TRAINING PROGRAM ON THE SUBJECT

2.1. The subject content

Training material is structured according to the module principle and consists of one educational module:

- **module №1 “Logistics audit of logistics systems and integrated supply chains”**, which is a logically complete, relatively independent, integral part of the curriculum, learning of which provides for modular test and analysis of its implementation.

2.2. Modular structuring and integrated requirements for each module

Module 1 “Logistics audit of logistics systems and integrated supply chains”

Integrated requirements to the module 1:

Know:

- terminology, principles and features of logistics audit of management systems and supply chains;
- methodical approaches to logistics audit;



- the method of identifying "narrow powers" in the management of supply chains according to the theory of constraints;
- sources of excess and hidden logistics costs and ways to minimize them;
- method of assessing consumer value in supply chain management;
- features and significance of benchmarking for the quality of logistics audit implementation in the logistics management system;
- global practice of auditing supply chain security management systems;
- methodology of supply chain security audit based on C-TPAT (Customs Trade Partnership Against Terrorism) criteria.

Learning outcomes:

- conduct a logistics audit using the Logistics Field Audit technology;
- to introduce a system of audit (monitoring, analysis) of logistics costs at the enterprise;
- carry out an analysis of total costs and make a functional calculation of logistics costs;
- prepare a report on the level of logistics costs and service based on the results of a logistics audit;
- conduct an audit of the supply chain management system based on value benchmarks and supply chain performance indicators;
- conduct a logistics audit of the state and structure of the logistics infrastructure
- use the Global MMOG/LE logistics and global supply chain audit tools recommended by GALIA/ODETTE.

Topic 1. Logistics audit in the logistics management system.

Logistics audit as the main function of logistics management. The essence, purpose and features of logistics audit. Comparative characteristics of logistics audit with traditional financial audit. Basic principles and sequence of logistics audit. Information base and key indicators of logistics activity, which are the focus of logistics audit. Risks of conducting a logistics audit by external auditors. Requirements for information protection during the logistics audit. Types of logistics audit and their characteristics.

Topic 2. Methodological approaches to logistics audit.

General methodological approaches to logistics audit. The procedure for conducting a logistics audit. Forming a project team to conduct an audit. Requirements for the selection of an external logistics auditor. Form of contract with the auditor. Methodological principles and models of decision-making by the auditor. Structuring the logistics process for its audit. Identification of key business processes and indicators of efficiency and productivity of logistics activities as a basis for logistics audit. Methods of conducting a logistics audit of a micrologistics system. Using the SCOR model for the purposes of controlling and auditing the main processes in supply chains. The technique of manifestation of "narrow powers" in the management of supply chains according to the theory of constraints



by Elijah Goldratt (Theory of Constraints; TOC). Systematization and documentation of the results of the logistics audit to assess the effectiveness of the logistics system, its functional areas and the level of perfection of supply chains. Strategic and operational management decisions to solve problems identified in the logistics audit. Development of a plan for implementing changes in supply chain management based on the results of the logistics audit. Reengineering of logistics business processes based on the results of logistics audit. Typical report form and presentation of logistics audit results.

Topic 3. Logistics Field Audit (LFA).

Logistics Field Audit (LFA) research structure. Principles and typical sequence of logistics audit according to LFA-technology. LFA Full Audit - a complete logistics audit of the company with the introduction of logistics auditors in the practice of operations and supply chain management; LFA Quick Scan - operational business diagnostics of the company's supply chain; LFA Freight Audit - independent assessment of transportation costs and recommendations for efficiency; LFA Warehouse Audit - analysis of the work of the warehouse, development and implementation of optimization recommendations; LFA Distribution Network Design - strategic planning of distribution networks; LFA Warehouse Perfect - logistics design of warehouse terminals; LFA Logistics IT Solution - selection and implementation of automated systems for managing logistics processes and SCM systems; LFA Logistics System Design - development / reengineering of supply chain management structure; LFA Open Tender 3PL - organization and holding of independent logistics tenders; LFA Certified Provider - a system of voluntary certification of logistics providers. Application of the PDCA cycle to logistics audit.

Topic 4. Logistics costs as an object of logistics audit.

Basic approaches to the classification of logistics costs. Types of logistics costs. Analysis of total costs. Functional costing. Sources of excess and hidden logistics costs and ways to minimize them. Audit system (monitoring, analysis) of logistics costs at the enterprise. Modular logistics audit database system. Features of individual centers of responsibility in the management of supply chains. Break-even point analysis. Marginal analysis (CVP-analysis) of the functioning of logistics systems. A typical form of report on the level of logistics costs and service based on the results of the logistics audit.

Topic 5. Audit of the supply chain management system according to values and key performance indicators of supply chains

The essence of added consumer value in supply chain management. Key indicators of value and options for measuring it. Criteria and indicators for assessing the quality of customer relationship (CRM) in the value supply chain. Criteria for assessing the level of consumer satisfaction. CVA assessments in terms of financial benefits to the consumer. Methods for estimating the model of creating additional consumer value in the supply chain (KANANO method). The model of



strategic profit as a tool for accounting for the completeness of the use of assets. The model of financial indicators of the supply chain on the basis of value added: an option for the value chain. Value compared to other financial indicators in the supply chain. Valuation method based on shareholder value. The advantage of the shareholder value model over traditional accounting indicators.

Topic 6. Benchmarking as a mandatory stage of logistics audit of logistics systems and integrated supply chains

The essence and significance of benchmarking for the quality of logistics audit implementation in the logistics management system. Analysis of the best world practices of supply chain management. Examples of perfect supply chains: criteria and indicators. The best world models of management of functional areas of logistics. Innovative models of supply chain management in a digital economy.

Topic 7. Logistic audit of the situation and structure of the logistics infrastructure

Significance and features of logistics infrastructure audit. Critical analysis of the strategy of transport and logistics infrastructure development, as a prerequisite for logistics audit of micro- and macro-logistics systems. Comparative characteristics of the situation and trends in the development of logistics infrastructure in the leading countries of the world. Audit of the situation of logistics infrastructure in Ukraine. Innovative trends in the development of logistics infrastructure in world practice.

Topic 8. Audit and certification of supply chain security management system based on international standards.

Content. World practice of audit of supply chain security management systems. International Standard ISO 28000 2007: Supply Chain Security Audit Tool. Logistics and Global Supply Chain Audit Tool Global MMOG / LE, recommended by GALIA / ODETTE. Supply chain security audit methodology based on C-TPAT (Customs Trade Partnership Against Terrorism) criteria. Typical supply chain security audit report form. Supply chain security certification programs.

2.3. Training schedule of the subject

№	Theme (thematic section)	Total, hour			
		Total	Lectures	Practicals	Self- study
1	2	3	4	5	6
Module 1 «Logistics audit of logistics systems and integrated supply chains»					
1 semester					
1	Logistics audit in the logistics management system	14	2	2	10
2	Methodological approaches to logistics audit	14	2	2	10



№	Theme (thematic section)	Total, hour			
		Total	Lectures	Practicals	Self- study
1	2	3	4	5	6
3	Logistics Field Audit (LFA)	14	2	2	10
4	Logistics costs as an object of logistics audit	14	2	2	10
5	Audit of the supply chain management system according to values and key performance indicators of supply chains	14	2	2	10
6	Benchmarking as a mandatory stage of logistics audit of logistics systems and integrated supply chains	14	2	2	10
7	Logistic audit of the situation and structure of the logistics infrastructure	14	2	2	10
8	Audit and certification of supply chain security management system based on international standards	15	2	2 1	10
9	Module Test 1	7	1	-	6
Total by the module №1		120	17	17	86
Total by the subject		120	17	17	86

3. BASIC CONCEPTS OF GUIDANCE ON THE SUBJECT

3.1. Teaching methods

It is recommended to use the following teaching methods during mastering the subject:

- explanatory-illustrative method;
- method of problem statement;
- case method;
- reproductive method;
- research method;
- work in small groups.

The implementation of these methods are carried out during lectures, demonstrations, self-study, work with the educational material, analysis and solution of problems.

3.2. List of references (basic and additional)

Basic literature

3.2.1. William J. Markham. Logistics Audit (Financial Times Series), 2009. 116 p.



3.2.2. Gaidabrus N. Key aspects of logistics services audit // Маркетинг і менеджмент інновацій, 2015, № 2. – [Online], available at: https://mmi.fem.sumdu.edu.ua/sites/default/files/mmi2015_2_234_242_0.pdf.

3.2.3. Cluster Policy of Innovative Development of the National Economy: Integration and Infrastructure Aspects: collective monograph / under the editorship of professor Svitlana Smerichevska. Poznań: Wydawnictwo naukowe WSPIA, 2020. 382 p. (P 335-351).

3.2.4. Pivodová P., Šišková V. Effect of logistics audits on companies performance improvement – [Online], available at: <http://clc2012.tanger.cz/files/proceedings/09/reports/1252.pdf>.

Additional literature:

3.2.5. Daghfous, Abdelkader, and Taisier Zoubi. "An auditing framework for knowledge-enabled supply chain management: Implications for sustainability." Sustainability 9.5 (2017).

3.2.6. Managing Global Supply Chains // Ron Basu, J. Nevan Wright. – Taylor & Francis, 2016. – 470 p.

3.2.7. Logistics Management and Strategy: Competing Through the Supply Chain / Alan Harrison, Remko I. van Hoek // Pearson Education, 2008. – 316 p.

3.2.8. Logistics Management /Sople // Pearson Education India, 2012 – 561 p.

3.3. Internet resource

3.3.1. Logistics Trend Radar. 5th Edition. Delivering Insights Today, Creating Value Tomorrow. DHL Customer Solutions & Innovation. URL: <https://bit.ly/3blr0X3>

3.3.2. Gartner Top 8 Supply Chain Technology Trends for 2020. URL : <http://gtnr.it/3ouDHIY>

3.3.3. Supply Chain Trends for 2020/2021: New Predictions To Watch Out For. URL : <http://bit.ly/3pUxxMu>

3.3.4. Supply Chain Security Audit Tool - Warehousing/Distribution. URL : <https://bit.ly/3ougQqL>

3.3.5. Top 11 Supply Chain Trends You Need to Know in 2020. URL : <https://bit.ly/3hXYFaM>



4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSMENT

4.1. Assessment of certain kinds of student academic activities is carried out in accordance with table 4.1.

Table 4.1

Kind of academic activities	Max grade
1 semester	
Module 1 «Logistics audit of logistics systems and integrated supply chains»	
Carrying out practical tasks and analysis of cases	70 (summary) (7×10 g.)
<i>For carrying out module test №1, a student must receive not less than</i>	42
Carrying out Module Test №1	30
Total by the Module №1	100
Total by the subject	100

The Graded Test Grade is determined (in grades and on a national scale) based on the results of all kinds of academic activities during the semester.

4.2. A student gets a credit for the completed assignment if the student’s performance has been assessed positively.

4.3. The total of Grades for individual academic activities completed by a student constitutes a Current Semester Module Grade, which is entered into the Module Control Register.

4.4. The final semester rating is converted into a grade on the national scale and the ECTS scale.

4.5. The Graded Test Grade is entered in an Examination Register, a student’s record book and academic card, e.g.: **92/Ex/A, 87/Good/B, 79/Good/C, 68/Sat/D, 65/Sat./E**, etc.

4.6. The Total Grade on the subject corresponds to the Graded Test Grade. The Total Grade on the subject is entered into Diploma Supplement.



(Ф 03.02 – 01)

АРКУШ ПОШИРЕННЯ ДОКУМЕНТА

№ прим.	Куди передано (підрозділ)	Дата видачі	П.І.Б. отримувача	Підпис отримувача	Примітки
	<i>Центр</i>	<i>15.12.22</i>	<i>Шевченко О.В.</i>	<i>[Signature]</i>	

(Ф 03.02 – 02)

АРКУШ ОЗНАЙОМЛЕННЯ З ДОКУМЕНТОМ

№ пор.	Прізвище ім'я по-батькові	Підпис ознайомленої особи	Дата ознайомлення	Примітки

(Ф 03.02 – 04)

АРКУШ РЕЄСТРАЦІЇ РЕВІЗІЇ

№ пор.	Прізвище ім'я по-батькові	Дата ревізії	Підпис	Висновок щодо адекватності

(Ф 03.02 – 03)

АРКУШ ОБЛІКУ ЗМІН

№ зміни	№ листа (сторінки)				Підпис особи, яка внесла зміну	Дата внесення зміни	Дата введення зміни
	Зміненого	Заміненого	Нового	Анульованого			

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				
Узгоджено				