

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

AGREED

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« 22 » 09 2023

APPROVED

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« 28 » 09 2023



Quality Management System
 COURSE TRAINING PROGRAM

on

«Cost Management in Air Transportation Supply Chains»

Educational Professional Programs: «Aviation Logistics»

Field of study: 07 «Management and Administration»

Specialty: 073 «Management»

Mode of study	Semester	Total (hours/credits ECTS)	Lectures	Practicals	Self-Study	HW/CGP/CW	TP/CPr	Form of semester control
Full time:	7	105 / 3,5	17	34	54	1 HW – 7 s.	-	Graded Test 7 s

Index: CB-7-073-4/21-2.1.31

QMS NAU CTP 19.05-01-2023



The Course Training Program on "Cost Management in Air Transportation Supply Chains" is developed on the basis of Educational Professional Programs «Aviation Logistics», Bachelor Curriculum CB-7-073-4/21 and Bachelor Extended Curriculums № ECB-7-073-4/23 for Speciality 073 «Management» and corresponding normative documents.

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INTRODUCTION

Course Training Program on «Cost Management in Air Transportation Supply Chains» 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 this academic subject is the formation of the theoretical and practical basis of the set of knowledge and skills that form the profile of a specialist in the field of aviation logistics.

The purpose of the subject is to provide students with systematic knowledge of cost management in air transportation supply chains, which will help future specialists while working at aviation enterprises and logistics companies.

The tasks of the subject are the following:

- studying the basics of cost management in air transport supply chains;
- understanding the forms of cooperation between airlines and other subjects of air transport supply chains, which lead to the emergence of different groups of operating costs;
- studying the types of costs in air transport supply chains and classification of logistics costs of subjects of air transport supply chains;
- formation of skills regarding the formation of a cost management system of subjects of air transport supply chains.

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** (LO):

LO 3. Demonstrate knowledge of theories, methods and functions of management, modern concepts of leadership.

LO 4. Demonstrate skills in identifying problems and justifying management decisions.

LO 6. Identify skills in searching, collecting and analyzing information, calculating indicators to substantiate management decisions to optimize costs in air transport supply chains.

LO 7. Identify organizational design skills.

LO 8. Apply management methods to ensure the efficiency of the organization - subjects of air transport supply chains.

LO 23. Carry out diagnostics of the logistics activities of the airline, identify and manage logistics costs, determine the impact of logistics costs on the financial condition of the airline and its competitiveness.

LO 24. Carry out the preparation of operational and financial reporting, aviation document flow, logistics audit and controlling based on the analysis of statistical reporting.


It should be noted that knowledge of modern solutions in the field of cost management in air transport supply chains forms the necessary competencies of a modern aviation logistics manager.

1.3. Competences that make it possible to acquire the subject.

As a result of studying the subject the student must acquire the following **competencies** (IC – integral competence, GK – general competence, PC – professional competence):

1. General competences:

- IC 1. Ability to solve complex specialized tasks and practical problems, which are characterized by complexity and uncertainty of conditions, in the field of logistics management or in the learning process, which involves the application of theories and methods of social and behavioral sciences, as well as operational and tactical management of the logistics processes of the enterprise.

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organization of complex logistics service for consumers, organization of operational logistics activities.

- IC 2. operational and tactical management of logistics business processes of aviation companies, organization of complex logistics services for consumers of aviation industry products, organization of operational logistics activities in the field of civil aviation

- GC 4. Ability to apply knowledge in practical situations.

- GC 9. Ability to learn and master modern knowledge, in particular in the field of cost management of various subjects of air transport supply chains.

- GC 20. Ability to assess the conditions and consequences of organizational and management decisions, the ability to justify management decisions and the ability to ensure their legitimacy from the standpoint of social responsibility.

- GC 21. Ability to think economically, the ability to apply quantitative and qualitative methods of analysis when making management decisions and to build economic, financial and organizational-management models.

2. Special (professional) competences:

- PC 2. Ability to analyze the results of the activities of the subjects of air transport supply chains, to compare them with the factors of influence of the external and internal environment.

- PC 12. Ability to analyze and structure the problems of subjects of air transport supply chains, to form reasonable solutions

- PC 21. Ability to diagnose the logistics activities of an airline, identify and manage logistics costs, develop and implement logistics investment projects and business plans.

- PC 22. Mastering the skills of drawing up operational and financial reporting, aviation document flow, logistics audit and controlling based on the analysis of statistical reporting.

1.4. Interdisciplinary links.

This subject is based on such subjects as "Basics of Logistics and Supply Chain Management", "Cargo Logistics", "Airport Logistics" and "Aviation Economics" and is the basis for studying subjects: "Managerial Controlling", "Aviation Logistic Project Management" 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 «Formation of a cost management system in air transportation supply chains», each of which is logically complete, relatively independent, holistic 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. "Formation of a cost management system in air transportation supply chains"

Integrated requirements to module №1:

Know:

– schemes of the organization of the cargo delivery chain involving air transport, the main business processes of the supply chain, economic resources used by the subject of the air transport supply chain to ensure the fulfilment of consumer orders;

– types of cost classifications of the subject of the air transport supply chain by main types of activities;



- the method of conducting an analysis of the costs of the subject of the air transport supply chain;
- ways to optimize costs in air transport supply chains.

Learning outcomes:

- work with arrays of data on the collection, grouping, processing, analysis, and interpretation of data on costs of the subject of the air transport supply chain;
- use methods for analysis, planning, and forecasting of costs of the subject of the air transport supply chain;
- ability to apply in practice the concepts, methods, and principles of cost optimization to organize the effective work of participants in the air transport supply chain.

Topic 1. Theoretical foundations of cost management in air transportation supply chains.

Air transportation supply chain: concept, structuring of subjects, constituent elements. Logistics concepts in cost management of air transport enterprises. Approaches to determining airline logistics costs.

Topic 2. Identification and cost decomposition of air transportation supply chains subjects.

Methodical approaches to the identification and decomposition of airline costs. Determination of the logistics component in the elements of the operating costs of the airline. Identification and decomposition of airline costs. Identification and decomposition of costs of the provider of logistics services - the subject of the air transport supply chain.

Topic 3. Costs analysis of air transportation supply chains subjects.

Methods of cost analysis of subjects of air transport supply chains. Factors that determine the dynamics and structure of logistics costs. Cost structuring of air transport supply chain entities. Analysis of the structure and level of logistics costs of subjects of air transport supply chains. Detailed analysis of the costs of air transport supply chain entities.

Topic 4. Study of the influence of costs on the formation of effective performance indicators of the subjects of air transportation supply chains.

The report on financial results is an integrator of performance indicators of the subjects of air transport supply chains. The main financial indicators that determine the results of the interaction of the subjects of air transport supply chains. Scheme of the formation of factors influencing costs for determining operating profit and net profit of the subject of air transport supply chains. Marginal analysis of the activity of the subject of air transport supply chains.

Topic 5. Multifactor cost analysis of air transportation supply chain subjects based on DuPont models.

Definition of a "scorecard" for the study of the cost impact of air transport supply chain subjects. Classification of DuPont models. ROA DuPont's model. A multilevel model of return on equity (modified model of strategic profit) with the determination of the parameters of the influence of logistics. Determination of the impact of logistics on the performance of the airline.

Topic 6. Cost conflicts management in air transportation supply chains

The concept of cost conflicts in air transport supply chains. Hierarchy of target conflicts arising as a result of preparation and implementation of air transportation services. Co-dependency of "trade-off" and "trade up". Ways to reconcile cost conflicts in air transport supply chains.

Topic 7. Transformation of the organizational structure of air transport supply chain subjects.

Concept of responsibility centres. Formation of the accounting system by responsibility centers. Transformation of the organizational structure of air transport supply chain entities by responsibility centers. Determination of the functional responsibility of the Cost Center in the organizational structure of the subject of air transport supply chains. Budgeting by responsibility centers.



2.3. Training schedule of the subject

№	Topic	Academic Hours			
		Total	Lectures	Practicals	Self-study
1	2	3	4	5	6
Module № 1 « Formation of a cost management system in air transportation supply chains»					
7 semester					
1.1.	Theoretical foundations of cost management in air transportation supply chains	10	2	2 2	4
1.2.	Identification and cost decomposition of air transportation supply chains subjects	11	2	2 2	5
1.3.	Costs analysis of air transportation supply chains subjects	12	2	2 2	6
1.4.	Study of the influence of costs on the formation of effective performance indicators of the subjects of air transportation supply chains	16	2	2 2 2	8
1.5.	Multifactor cost analysis of air transportation supply chain subjects based on DuPont models	16	2	2 2 2	8
1.6.	Cost conflicts management in air transportation supply chains	12	2	2 2	6
1.7.	Transformation of the organizational structure of air transport supply chain subjects.	18	2 2	2 2 2	8
1.8.	Carrying out homework	8	-	-	8
1.9.	Module test № 1	2	1	-	1
Total for Module № 1		105	17	34	54
Total for the subject		105	17	34	54

2.4. Homework

Homework on the subject is carried out by the students in the seventh semester in accordance with the methodical recommendations approved in the established order, which consists of the formation (improvement) of a cost management system of a specific company - a subject of the air transport supply chain.

Homework is performed with the aim of consolidating, systematizing, generalizing and deepening knowledge of cost management in air transport supply chains, stimulating independence in solving specific professional tasks, forming the ability to find ways to optimize the costs of subjects of air transport supply chains, and acquiring practical skills in developing recommendations for improvement cost management systems in air transport supply chains.

Time is needed to carry out Homework 8 hours of self-study.

3. BASIC CONCEPTS OF GUIDANCE ON THE SUBJECT

3.1. Teaching methods

The following teaching methods are used in the study of the subject:

- explanatory and illustrative method;
- method of problem presentation;



- reproductive method;
- research method.

The implementation of these methods is carried out during lectures, demonstrations, independent problem solving, under work with educational literature, analysis and problem solving in the subject of the subject.

3.2. List of references (basic and additional)

Basic literature

- 3.2.1. IATA Airline Cost Management. INSTRUCTIONS MANUAL. 2022. 42 p.
- 3.2.2. Mariia Hryhorak, Ladislav Šimák. Using the Concept of Supply Chain Management in Aviation Logistics. LOGISTICS IN AVIATION. MONOGRAPH. 2021, pp.59-67
- 3.2.3. Air Cargo Transportation: Textbook / I. Vasylenko, V. Voitsehovskiy, S. Lytvynenko, T. Gabrielova. Kyiv: Publishing House "Condor", 2023. 184 p..
- 3.2.4. Gu, Y. and Dong, S. (2016) Logistics Cost Management from the Supply Chain Perspective. Journal of Service Science and Management, 9, 229-232. doi: 10.4236/jssm.2016.93028.
- 3.2.5. Sayan Mitra, Avishek Majumder (2019) Supply chain costs management models. <https://www.projectguru.in/supply-chain-costs-management-models>

Additional literature

- 3.2.6. Аль-Газу. А. Формування «центрів відповідальності» в управлінні витратами авіакомпанії. Економічний простір, 2018. (132). С. 129-140. <http://www.prostir.pdaba.dp.ua/index.php/journal/article/view/38>
- 3.2.7. Аль-Газу Алі. Облік витрат і калькулювання собівартості послуг авіакомпаній: дис... канд. екон. наук: 08.00.09 / ДВНЗ «Київський національний економічний університет імені Вадима Гетьмана», Київ, 2020. 225 с. URL: <https://drive.google.com/file/d/1NFUB7WvDCvgTrdRwo-P7M6rz5O7m1VEj/view>
- 3.2.8. Городецька Л.О., Новокрещенов І.О. Визначення собівартості перевезень авіакомпаніями. URL: <https://er.nau.edu.ua/bitstream/NAU/9741/1/Gorod.pdf>
- 3.2.9. Мадяр Р. О., Гадьмаші В. Р., Далекорей С. М. Управління витратами в ланцюгах постачання як інструмент досягнення конкурентних переваг бізнесу в глобальному економічному просторі. Інвестиції: практика та досвід. 2021. № 1. С. 66–70.
- 3.2.10. Позняк О.В. Управління логістичними витратами авіакомпанії: дис. канд. екон. наук : 08.00.04 / Національний авіаційний університет. Київ, 2011. 215 с.
- 3.2.11. Харченко М.В., Турсунов А.Т. Управління логістичними витратами аеропорту. Вісник ХДУ Серія Економічні науки. № 34 (2019). С. 96-100.

3.3. Internet resource

- 3.3.1. How to calculate air freight cost. <https://dfreight.org/blog/a-deep-dive-into-calculating-air-freight-cost/>
- 3.3.2. Air Cargo - Meaning & Definition. <https://www.mbaskool.com/business-concepts/operations-logistics-supply-chain-terms.html>
- 3.3.3. The Process of Airfreight. <https://www.transcocargo.com.au/the-process-of-airfreight/>
- 3.3.4. ICAO – official website. URL: <https://www.icao.int/Pages/default.aspx>
- 3.3.5. IATA- official website. URL: <https://www.iata.org/>
- 3.3.6. Methodical guidance materials of the logistics department (in electronic form).



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

Types of academic activities	Max grade
Carrying out of practical tasks	70
Carrying out homework	10
<i>For carrying out module test module test 1, a student must receive not less than</i>	<i>48</i>
Carrying out Module Test №1	20
Total for 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 Graded Test Grade 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
		26.09.23	Мисевич О.В.	<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			
1	8-9	8-9			<i>[Signature]</i>	29.02.24	29.02.24

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник	<i>[Signature]</i>	Григорук О.В.	розробник	29.02.24
Узгоджено	<i>[Signature]</i>	Склярівська С.В.	в.в. зав. каф.	29.02.24
Узгоджено				
Узгоджено				