

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

NATIONAL AVIATION UNIVERSITY

Faculty of Transport, Management and Logistics

Air Transportation Management Department


AGREED

Dean of Faculty of Transport,
Management and Logistics

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 «29» 06 2021

APPROVED

Vice-Rector for Academic Affairs


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 «25» 06 2021


Quality Management System
COURSE TRAINING PROGRAM
 on
«Air Cargo Transportation»

Educational Professional Program: «Air Transportation Management»

Field of study: 27 «Transport»

Speciality: 275 «Air Transport Technologies»

Specialization: 275.04 «Air Transport Technologies»

Training Form	Semester	Total (hours/credits ECTS)	Lectures	Practicals	Lab. clas.	Self-study	HW/CGP	TP/CP	Semester Grade
Full-time	6	150/5.0	34	–	34	82	–	CP-6s	examination 6s

Index: CB-7-275-1/21-2.1.30

QMS NAU CTP 19.01–01–2021



Quality Management System.
Course Training Program
on
«Air Cargo Transportation»

Document
Code

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Course Training Program on «Air Cargo Transportation» is developed on the basis of the Educational Program on Air Transportation Management, Bachelor Curriculum and Extended Curriculum №CB-7-275-1/21, №ECB-7-275-1/21 for Speciality 275 «Air Transport Technologies», Specialization 275.04 «Air Transport Technologies» and corresponding normative documents.

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INTRODUCTION

Course Training Program on «Air Cargo Transportation» 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

The subject is an integral part of the theoretical basis of knowledge and skills for mastering technological subjects in training specialists in the field of air transportation management and transports systems.

Main target to study the subject is provision of decision making by a specialist in the practice of air cargo transportation, giving knowledge from organization and technology of cargo transportation by air, shipping documents, rules and international standards of goods transportation by air, giving skills to manage goods transportation by air, draw up shipping documents, provide high quality level of cargo clients servicing, which satisfy requirements of qualifying characteristic of specialist of this direction.


The tasks of the discipline are mastering technology of air cargo transportation, development technological schemes of cargo handling, following rules and international standards of air cargo transportation, procedure of technical means for cargo delivery and handling choosing, provision of high quality level of customers servicing, increasing aviation transportation effectiveness.

1.2. Learning outcomes the subject makes it possible to achieve

- Take responsibility, show public consciousness, social activity and participation in the life of civil society, think analytically, critically understand the world;
- Organize and manage the transportation of goods in various connections. Choose the kind, brand, type of aircraft and routes. Monitor the transportation progress;
- Evaluate the parameters of traffic flows. Design schemes and networks of transport systems. Develop technologies for operational management of traffic flows;
- Introduce methods of safe transport activities organizing;
- Choose information systems for transportation management. Operate automated control systems and navigation systems in the transportation process. Use electronic cards.

1.3. Competences the subject makes it possible to acquire

- Ability to realize their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine;
- Ability to preserve and increase moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology, use different types and forms of physical activity for active recreation and healthy living;
- Skills in the use of information and communication technologies;
- Ability to abstract thinking, analysis and synthesis;
- Ability to analyze and predict the parameters and performance indicators of transport systems and technologies, taking into account the impact of the environment;
- Ability to organize and manage loading and unloading operations and warehousing operations on transport;
- Ability to organize and manage transportation of goods (by transport type). Ability to apply modeling and optimization methods for effective management of complex technological as well as organizational and technical transport complexes;
- Ability to quickly control the flow of traffic;
- Ability to design transport (transport-production, transport-warehousing) systems and their individual elements. Ability to develop and use appropriate software for automation of transport systems and processes;

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- Ability to evaluate and ensure ergonomic efficiency of transport technologies;
- Ability to organize international transportation;
- Ability to manage the quality of air transport enterprises, identify and prevent possible risks;
- Ability to identify insurance cases at air transport, to develop a system of measures to prevent and eliminate them.

1.4. Interdisciplinary Connections

The subject is based on following subjects, as: “Cargo Science”, “International Transportation”, and is a basis for studying the following subjects: Course Project “Air Cargo Transportation”.

2. COURSE TRAINING PROGRAM ON THE SUBJECT

2.1. The subject content

Training material is structured according to the module principle and consists of **two educational modules**:

- **Module № 1 «Organization and Technology of Cargo and Mail Transportation by Air»,**
- **Module № 2 «Calculation of Air Cargo Terminals Technological Parameters and Air Cargo Transportation Rules»,**

that are logically complete, relatively independent, holistic part of the subject, learning of which provides module test and analysis of its performance.

Separate **third module** (educational component) is a Course Project (CP), which is performed in the sixth semester. CP is an important component of consolidation and deepening of theoretical and practical knowledge and skills acquired by the student in the process of mastering the educational material of the discipline.

2.2. Modular structuring and integrated requirements for each module

Module №1 « Organization and Technology of Cargo and Mail Transportation by Air» Integrated requirements to the module №1:

Know:

- Functions, tasks and structure of cargo transportation administration;
- Purpose and structure of Air Cargo Terminals, warehousing;
- Organizations of cargo transportation sale and reservation;
- Procedure of documentations drawing up during goods transportation;
- Organization and technology of cargo and mail transportation by air.

Learning outcomes:

- Develop technology of cargo and mail handling in case of international and domestic transportation;
- Draw up cargo shipping documents.


Topic 1. Organization of cargo transportation management on air transport

Concept and subject of the course “Air Cargo Transportation”. Aim of mastering the subject. Development of air cargo transportation market in Ukraine. Main terms and definitions. Organizational structure of air transportation management. State organs, managing transportation of cargo by air, their functions and tasks.

Organization of cargo transportation management at the enterprises of civil aviation (airlines, airports, agencies, etc.).

Topic 2. Organization of cargo transportation selling

Cargo transportation as a product of airline activity. Characteristics of cargo flows. Organization of goods attraction to be transported by air. Systems of air transportation selling. Organization and technology of

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selling and reservation of cargo transportation. Interaction of airline and agent. Agent Contract. Types of payment for goods transportation. Automation of cargo transportation selling and reservation.

Air Waybill (AWB), its purpose, procedure of completion and usage. Air cargo tariffs. Preparation of goods for transportation. Terms and sequence of goods delivery by air transport.

Topic 3. Air Cargo Terminals

Purpose of Air Cargo Terminals. Composition of Air Cargo Terminals buildings and constructions. Main requirements to location and designing of Air Cargo Terminals. Operating hours of Air Cargo Terminals.

Freight warehouses and their classification. Basic technical and operational requirements to warehouses and their equipment. Ways of goods storage and location in the warehouse. Problems of providing quantitative and qualitative goods preservation.

Classification of equipment for goods storage and moving. Universal and specialized racks, warehouse pallets. Lifting, transportation and weight-measuring equipment. Complex mechanization and automation of warehouse works.

Topic 4. Organization and technology of goods transportation by international and domestic airlines

Peculiarities of goods transportation management during international carriages. Types of airport formalities during transportation of goods by international airlines. Provision of aviation safety during goods transportation by air. Interaction of services of mail and goods transportation organization with services of related agencies (custom control, sanitary and quarantine control, etc.).

Technology of departure cargo handling. Order of goods receiving for transportation. Cargo handling in warehouse. Transportation of goods inside airfield. Order and technology of aircraft loading. Technology of arrival goods handling. Order of goods delivery. Handling peculiarities of transfer goods.

Mechanization of goods handling processes. Classification of mechanized means. Types of mechanized means. Organization of goods transportation in containers and pallets. Technology of goods transportations in containers and pallets. Safety requirements during goods transportation.

Completion of documents during goods transportation. Flight shipping documentation. Warehouse documentation. Ways of goods transportation management by air improvement.

Topic 5. Organization of flight's freight loading consolidation

Purpose and tasks of flight loading consolidation. Interaction of aviation enterprises services in the process of flights consolidation. Production and dispatching services of aviation enterprises, their functions and structure.

Technological process of flight freight loading consolidation. Organization of documents completion during flight loading consolidation. Tasks of transportation management services in flight safety provision.

Topic 6. Information systems of cargo transportation

Information systems for air carriers. Airport information systems. Logistic systems of air transportation management and control. Warehouse systems.

Topic 7. Organization and technology of air mail transportation

Basic terms and definitions. Normative documents that regulate air mail transportation. Organization of contract relationships with communication enterprises. Structural subdivisions of transportations organization services deal with mail transportations. Technological process of mail transportation.


Documentation, used during mail transportation, order of its completion and usage. Organization and technology of express goods and mail transportation.

Module № 2 «Calculation of Air Cargo Terminals Technological Parameters and Air Cargo Transportation Rules»

Integrated requirements to the module №2:

Know:

- Work of Air Cargo Terminals as the queueing system;

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- Methods of Air Cargo Terminals technological parameters calculation, e.g. warehouses areas, technological equipment, mechanized means;
- Requirements to technical and economic designing of Air Cargo Terminals, location of selected equipment, cargo flows management, etc.
- Normative documentations, which regulate air cargo transportation;
- Rights and obligations of carriers and cargo customers;
- Order of execution of documents deal with defects occurring during air cargo transportation, registration of claims;
- Determination of carriers and cargo customers responsibilities during air cargo transportation according to the national and international normative documents.

Learning outcomes:

- Calculate technological parameters and number of equipment of Air Cargo Terminals;
- Determine rules and obligations of carrier and cargo customers for specific conditions of transportation;
- Complete documentations in case of defects;
- Manage claims;
- Determine responsibility of carrier and cargo customer during air cargo transportation according to the national and international normative documents.

Topic 1. Calculation of Air Cargo Terminals technological parameters

Air Cargo Terminals as queuing system. Calculations of the required area, volume and capacity of warehouses. Determination of warehouse loading-unloading working front length. Progress data, characterizing warehouse work.

Calculations of necessary number of equipment and its productivity. Requirements to Air Cargo Terminals designing. Principles of organization of cargo flows, goods handling system and equipment choosing.

Topic 2. Carrier's and cargo customers' rules and obligations

Normative documentations that regulate cargo transportation by air. International and domestic regulation. Rules of goods transportation by air. Contract conditions. Rules and obligations of carrier, appeared from the contract of goods transportation by air. Rules and obligations of shippers and consignees.

Topic 3. Malfunctions occurring during goods transportation and order of their registration

Character of malfunctions during goods and mail transportation by air. Completion of documents about malfunctions occurring during goods transportation, order of their usage. Goods searching. Determination of goods owners.

Topic 4. Carrier's and cargo customers' responsibility


Normative documentations that regulate sides' responsibility during goods transportation. Types and limits of carrier's responsibility according to the international and national legal standards. Responsibility of cargo customers. Claims work.

Module № 3 (educational component) «Course Project»

Course Project (CP) from the subject is performed in the 6th semester according to the method guide, with the purpose to consolidate theoretical knowledge and skills in the field of technology of goods handling and calculation of Air Cargo Terminals technological parameters.

Performance of course project is an important step in the degree theses preparation of a future specialist in air transportation management.

Course project comprises all stages of technological process development deal with Air Cargo Terminals works, including main calculations of technological parameters, investigation of organizational and productive activity as well as development of special cargo handling technology on the basis of received results.

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The aim of the course project is mastering by students the skills as follows:


- to calculate technological parameters of Air Cargo Terminals on the basis of cargo flows structure analysis;
- to develop special technology of goods handling on the basis of international standards with respect to quality and safety of technological process;
- to plan location of Air Cargo Terminals elements, storage rooms and equipments.
- to develop organizational structure of Air Cargo Terminals.

Performance, execution and passing of the course project is performed individually by each students in accordance with method guides.

Time necessary for course project performance is up to 45 hours of self-studying.

2.3. Training schedule of the subject

№	Theme (thematic section)	Total, hour			
		Total	Lectures	Labs	Self-study
1	2	3	4	5	6
Module №1 « Organization and Technology of Cargo and Mail Transportation by Air»					
6 semester					
1.1	Organization of cargo transportation management on air transport	6	2	2	2
1.2	Organization of cargo transportation selling	6	2	2	2
1.3	Air Cargo Terminals	18	2 2 2	5 2 2	6
1.4	Organization and technology of goods transportation by international and domestic airlines. Organization of flight's freight loading consolidation	16	2 2 2	2 2 2	6
1.5	Information systems of cargo transportation	6	2	2	2
1.6	Air Cargo Terminals	6	2	2	2
1.7	Organization and technology of air mail transportation	6	2	2	2
1.8	Module Test №1	3	-	2	1
Total by the module №1		67	22	22	23
Module №2 « Calculation of Air Cargo Terminals Technological Parameters and Air Cargo Transportation Rules»					
2.1	Calculation of Air Cargo Terminals technological parameters	12	2 2	2 2	4
2.2	Carrier's and cargo customers' rules and obligations	12	2 2	2 2	4
2.3	Malfunctions occurring during goods transportation and order of their registration	6	2	2	2
2.4	Carrier's and cargo customers' responsibility	4	2	-	2
2.5	Module Test №2	4	-	2	2
Total by the module №2		38	12	12	14
Module №3 «Course Project»					
3.1	Technological process of Air Cargo Terminal Work	45	-	-	45
Total by the module №3		45	-	-	45
Total by the subject		150	34	34	82

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2.4. Questions list for the examination

The list of questions and content of tasks for preparation for the exam are developed by the leading teacher of the department in accordance with the course training program, approved at the meeting of the department and distributed among students.

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 and illustrative method;
- method of problem presentation;
- reproductive method;
- research method.

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 literature

3.2.1. Gabrielova T., Lytvynenko S., Ivannikova V., Lytvynenko L., Borets I. Cargo Science and Logistics: Textbook. – K.: Publishing House “Condor”, 2020. – 268 p.

3.2.2. Габрієлова Т.Ю., Іваннікова В.Ю., Борець І.В., Медінський Д.В. Авіаційні вантажні перевезення: методичні рекомендації до виконання курсового проекту для студентів спеціальності 275 «Транспортні технології (на повітряному транспорті)». – К.: НАУ, 2020. – 53 с.

3.2.3. Gabrielova T.Yu., Ivannikova V.Yu. Cargo Transportation: term paper method guide for students of major 1004 “Transport technologies”. – K.: NAU, 2013. – 32 p.

3.2.4. ПРАВИЛА повітряних перевезень вантажів. - Наказ міністерства транспорту України №793 від 14.10.2003. із змінами, внесеними згідно з Наказом Міністерства інфраструктури № 728 від 30.11.2012

3.2.5. ІНСТРУКЦІЯ з організації перевезень вантажів повітряним транспортом – Наказ міністерства транспорту України № 822 від 02.11.2005.

3.2.6. Авіаційні правила України «Порядок та умови повітряних перевезень небезпечних вантажів». – Наказ Державної авіаційної служби України №1802 від 12.11.2020.

3.2.7. Про затвердження Порядку виконання митних формальностей на повітряному транспорті, наказ міністерства фінансів України від 03.08.2018 № 671 Зареєстровано в Міністерстві юстиції України 11 вересня 2018 р. за № 1036/32488

Additional Literature

3.2.8. Gabrielova T.Yu., Gyrych V.Yu. Cargo Science: lectures course. – Kiev: NAU, 2012. – 96p.

3.2.9. Перевезення спеціальних вантажів: підручник. Т.Ю.Габрієлова, С.Л.Литвиненко, О.В.Баннов – К.: НАУ, 2015. – 456 с.

3.2.10. THE Air Cargo Tariff, поточне видання

3.2.11. AIRPORT Handling Manual, поточне видання

3.2.12. PRINCIPLES of Cargo Handling, поточне видання.

3.2.13. DANGEROUS Goods Regulations, поточне видання.

3.2.14. Live Animals Regulations, поточне видання.

3.2.15. Perishable Cargo Regulations, поточне видання


3.3. Internet Information resource

3.3.1. <https://www.aex.ru/>

3.3.2. https://www.flyuia.com/ua/ru/home?gclid=Cj0KCQjwzozsBRCNARIsAEM9kBM9R30-gxLsx4PoevBIJ0WbEsaEmNAsT5q_bSnckiBBhqr9tNPG3KlaAsp6EALw_wcB

3.3.3. <https://kbp.aero/ru/>

3.3.4. <https://www.twirpx.com/>

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3.3.5. <http://www.lib.nau.edu.ua/elbook/>

4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSMENT

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

Table 4.1

Kind of Academic Work	Maximum Grade Values	Kind of Academic Work	Maximum Grade Values
6 semester			
Module № 1 «Organization and Technology of Cargo and Mail Transportation by Air»		Module № 2 «Calculation of Air Cargo Terminals Technological Parameters and Air Cargo Transportation Rules»	
Kind of academic work	Grade values	Kind of academic work	Grade values
Carrying out labs (5 points x 7)	35 (total)	Carrying out labs (4 points x 4)	16 (total)
<i>For admission to complete module test №1, a student must receive not less than</i>	<i>21 points</i>	<i>For admission to complete module test №2, a student must receive not less than</i>	<i>10 points</i>
Carrying out Module Test №1	15	Carrying out Module Test №2	14
Total by the Module №1	50	Total by the Module №2	30
Total by the Modules №1, №2			80
Semester examination			20
Total by the subject			100
Module №3			
Kind of Academic Work		Maximum Grade Values	
Carrying out of Course Project		60	
Defense of Course Project		40	
Performance and defense of Course Project		100	

4.2. Completed types of educational work are credited to the student, if he received a positive rating for them.

4.3. The sum of rating assessments received by the student for certain types of completed academic work is the current modular rating assessment, which is recorded in the module control.


4.4. The final modular rating obtained by the student based on the results of the course defense and defense in points, on the national scale and ECTS scale is entered in the module control, as well as in the study card, individual student curriculum and Diploma Supplement, for example, as follows: **92 / Excellent / A, 87 / Good / B, 79 / Good / C, 68 / Sat./D, 65 / Sat./E, etc.**

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

4.6. The final semester rating in points, on the national scale and the ECTS scale is entered in the test report, study card and individual curriculum of the student (record book), for example, as follows: **92 / Excellent / A, 87 / Good / B, 79 / Good / C, 68 / Sat./D, 65 / Sat./E, etc.**

4.7. The Total Grade for the subject is equal to the average grade from Total Semester Grades with its further transformation into national scale and ECTS system.

The Total Grade is recorded to the Diploma Appendix

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(Ф 03.02 – 01)

АРКУШ ПОШИРЕННЯ ДОКУМЕНТА

№ прим.	Куди передано (підрозділ)	Дата видачі	П.І.Б. отримувача	Підпис отримувача	Примітки

(Ф 03.02 – 02)

АРКУШ ОЗНАЙОМЛЕННЯ З ДОКУМЕНТОМ

№ пор.	Прізвище, ім'я, по батькові	Підпис ознайомленої особи	Дата ознайом- лення	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 введен- ня зміни
	Зміненого	Заміненого	Нового	Анульо- ваного			

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				
Узгоджено				