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

APPROVED
Vice- Rector for Academics
_____ A. Gudmanian
«___»_____2019

Quality Management System

Course Training Program

on

"Transport Vehicles"

Field of study: 27 "Transport"
Specialty: 275 "Air Transport Technologies"
Specialization: 275.04 "Air Transport Technologies"
Educational Professional Programs: "Air Transportation Management"
"Multimodal Transport and Logistics"

Year of Study – 2 Semester – 3

Lectures - 17 Graded Test– 3rd semester
Practicals - 34
Self-study - 54
Total (hours / ECTS credits) - 105/3.5

Index: ECB-7-275/17-2.2.3

The Course Training Program on "Transport Vehicles" is based on the Educational Professional Program and Bachelor Extended Curriculum No ECB-7-275/17 for Specialty 275 "Air Transport Technologies", Specialization - 275.04 "Air Transport Technologies", Educational and Professional Programs: Air Transportation Management and Multimodal Transport and Logistics and Ukrainian version of this Course Training Program, approved by the Vice-Rector for Academics on 18.02.2019 and corresponding normative documents and order №207/од of 27.04.2018.

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Discussed and approved by the Graduate Department for Specialty 275 "Air Transport Technologies", Specialization 275.04 "Air Transport Technologies" Educational Professional Program for Air Transportation Management – Air Transportation Management Department, Minutes No 7 of 11 of March 2019.

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Discussed and approved by the Graduate Department for Specialty 275 "Air Transport Technologies", Specialization 275.04 "Air Transport Technologies" based on the Educational Professional Program for Multimodal Transport and Logistics – Multimodal Transport and Logistics Department, Minutes No ____ of_____2019.

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«___»_____2019

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CONTENT

1. Introduction

The Course Training Program on "Transport Vehicles" is designed based on the "Methodological guidelines for the development and performance of the Training Program and the Course Training Program of the disciplines" entered into force by order No 106. 13.07.2017 and corresponding normative documents.

This subject develops students' theoretical knowledge and skills for technical studies.

The goal of the teaching this subject is to familiarize students with transport vehicle characteristics, operational capabilities and adaptivity for passenger and freight transportation.

The objectives of studying the discipline are to learn about

- the principles of vehicle construction and classification;
- the compliance with the applicable transportation standards;
- the rational accommodation of passengers and freight;
- transport vehicle improvement technologies.

As a result of studying this discipline the students must:

Know:

- transport vehicle's operating data;
- principles of transport infrastructure functions;
- application of modern transportation methods;
- aircraft maintenance management at airport;

Be able to:

- classify transport vehicles;
- give definition of transport vehicles;
- overview passenger aircraft design;
- analyze airport handling equipment;
- evaluate vehicle technical specifications;
- analyze vehicle operating characteristics;
- speak on vehicle safety and security;
- describe transport aircraft construction.

The educational material of the discipline is structured according to the modular manner and consists of two training modules **"Transport Vehicles Performance Characteristics" and "Evaluation of Transport Vehicles Technical Conditions and Performance".**

Module 1 "Transport Vehicles Performance Characteristics".

Topic 2.1.1. Classification of Transport Vehicles, Their Main Groups.

Broad classification of transport vehicles. Classification of wheeled vehicles by their design (categories of vehicles). Classification of aircraft. Key requirements to transport vehicles. Functional and application features of transport vehicles. Safety features of transport vehicles.

Topic 2.1.2. Passenger and freight transport vehicles, and their operating requirements.

Definition of motor vehicles and their characteristics. Motor vehicles application and modes. Passenger motor vehicles. Freight motor vehicles and their specifications. Road transport analysis. Cargo aircraft.

Topic 2.1.3. Overview of passenger aircraft design.

Classification of airport passenger vehicles. Structural elements of airport transport. Motor car accommodation scheme. Airport apron bus accommodation scheme. Types of apron equipment for passenger handling. Vehicles for passenger embarkation/disembarkation. Terminal finder technical characteristics.

Topic 2.1.4. Baggage, freight and mail handling equipment at the airport.

Airport special trucks. Passenger baggage handling equipment design. Self-propelled container transponders/loaders.

Module 2.1.5. "Evaluation of Transport Vehicles Technical Conditions and Performance".

Topic 2.1.6. Evaluation of vehicle technical specifications. Transport vehicle operation system. Transport vehicle design requirements. Guide to aircraft airworthiness. Aircraft certification. Aircraft maintenance strategy. Analysis of aircraft technical conditions and reliability. Modern MRO systems and elements. Aircraft operating system.

Topic 2.1.7. Analysis of vehicle operating characteristics. Conditions of transport vehicle operation. Main operating characteristics of transport vehicles. Factors influencing vehicle operation. Vehicle dynamic passport creation. Calculation of vehicle's fuel economy.

Topic 2.1.8. Transport vehicle safety and security.

Terminology of aircraft, movement and navigation safety. Factors influencing vehicle safety and security. Vehicle active security. Passive vehicle security. Design influence on vehicle safety. Vehicle brake characteristics. Flight safety analysis over the past years.

Topic 2.1.9. Transport aircraft.

Aircraft construction adaptability to passenger and freight transportation. Passenger boarding. Air pallets and containers design and marking. Narrow- and wide-body aircraft cargo compartments. Baggage coding and unloading. Impact of passenger and freight accommodation on aircraft balance.

2. SUBJECT CONTENT

2.1. The structure of the Subject

Table 2.1

№	Theme	Academic hours			
		Total	Lectures	Practicals	Self Study
1	2	3	4	5	6
3d Semester					
Module №1 «Transport Vehicles Performance Characteristics»					
1.1	Classification of Transport Vehicles, Their Main Groups	12	2	4	6
1.2	Passenger and freight transport vehicles, and their operating requirements	12	2	4	6
1.3	Overview of passenger aircraft design	12	2	4	6
1.4	Baggage, freight and mail handling equipment at the airport	11	2	4	5
1.5	**Module test №1**	7	-	2	5
Total by module №1		**54**	**8**	**18**	**28**
Module №2 «Evaluation of Transport Vehicles Technical Conditions and Performance»					
2.1	Evaluation of Transport Vehicles Technical Conditions and Performance	13	4	4	5
2.2	Analysis of vehicle operating characteristics	11	2	4	5
2.3	Transport vehicle safety and security	11	2	4	5
2.4	Transport aircraft	8	1	2	5
2.5	**Module test №2**	8	-	2	6
Total by module №2		**51**	**9**	**16**	**26**
Total by 3d semester		**105**	**17**	**34**	**54**
Total by the subject		**105**	**17**	**34**	**54**

2.2. Lectures, their subject matter and scope

№	Theme	Academic hours	
		Lectures	Self Study
3d Semester			
Module №1 «Transport Vehicles Performance Characteristics»			
1.1	Classification of Transport Vehicles, Their Main Groups	2	2
1.2	Passenger and freight transport vehicles, and their operating requirements	2	2
1.3	Overview of passenger aircraft design	2	2
1.4	Baggage, freight and mail handling equipment at the airport	2	1
Total by module №1		**8**	**7**
Module №2 «Evaluation of Transport Vehicles Technical Conditions and Performance»			
2.1	Evaluation of Transport Vehicles Technical Conditions and Performance	2	1
2.2	Analysis of vehicle operating characteristics	2	1
2.3	Transport vehicle safety and security	2	2
2.4	Transport aircraft	2	2
2.5	Aircraft construction adaptability to passenger and freight transportation	1	2
Total by module №2		**9**	**8**
Total by the subject		**17**	**15**

2.3. Practicals, their subject matter and scope

№	Theme	Academic hours	
		Practicals	Self Study
3d Semester			
Модуль №1 ««Transport Vehicles Performance Characteristics»»			
1.1	Analysis of vehicle operating characteristics	2	2
1.2	Evaluation of vehicle technical specifications	2	2
1.3	Analysis of vehicles for passengers transportation	2	2
1.4	Determination of vehicles requirements intended for passenger transportation	2	2
1.5	Analysis of the main elements of the vehicles design	2	2
1.6	Estimation of the design of vehicles for landing - disembarkation of air passengers	2	2
1.7	Research of the lay-out schemes of cargo special vehicles of airports	2	2
1.8	Determination of the design features of self-propelled container loaders	2	2
1.9	Module test №1	2	5
Total by module №1		**18**	**21**
Module №2 «Evaluation of Transport Vehicles Technical Conditions and Performance»			

2.1	Analysis of the main elements of the technical materials system	2	1
2.2	Determination of elements of the system of maintenance of the aircraft	2	2
2.3	Construction of a dynamic vehicle passport	2	1
2.4	Calculation of fuel and economic characteristics	2	2
2.5	Assessment of the influence of the vehicle layout parameters on traffic safety	2	1
2.6	Assessment of the safety of flights, traffic, navigation using the method of comparative analysis	2	2
2.7	Analysis of the main methods of landing passengers aboard an aircraft	2	3
2.8	Module test №2	2	6
Total by module №2		**16**	**18**
Total by the subject		**34**	**39**

2.4. Student's self-study (individual work), its content and scope

№	Content	Academic hours
3d Semester		
1.	Lectures materials	15
2.	Preparation for practicals	28
3.	Preparation for module tests №1, №2	11
Total by the subject		**54**

3. BASIC CONCEPTS OF GUIDANCE ON THE SUBJECT

3.1. List of references

Basic

3.1.1. Доля В. К. Пасажирські перевезення / В. К. Доля. – Х. : Вид-во „Форт", 2011. – 507 с.

3.1.2. Яцківський Л.Ю., Зеркалов Д.В. Загальний курс транспорту. Книга 2. Навчальний посібник - К.: Арістей, 2007. – 504 с.

3.1.3. Тамаргазін О.А., Білякович О.М., Варюхно В.В., Нікулін С.М. Технічна експлуатація авіаційної наземної техніки: Підручник / О.А.Тамаргазін, О.М.Білякович, В.В.Варюхно, С.М.Нікулін. – К.: ДП «Розвиток» МВС України, 2017. – 320 с.

3.1.4. Левковець П.Р, Зеркалов Д.В., Мельниченко О.І., Казаченко О.Г Управління автомобільним транспортом. Навчальний посібник. За редакцією Д.В. Зеркалова. - К.: Арістей, 2006.- 416 с.

3.1.5. Горев А.Э. Организация автомобильных перевозок и безопасность движения : учеб. пособие для студ. высш. учеб. заведений / А.Э. Горев, Е.М. Олещенко. – М. : Издательский центр «Академия», 2006. – 256 с.

3.1.6. Воркут А. И. Грузовые автомобильные перевозки / А. И. Воркут. – К. : Вища шк. головное изд-во, 1986. – 447 с.

Additional

3.1.7. Aircraft Ground Support Equipment and Airport Technical Equipment Operation: Guide to Practical Classes / O.M.Bilyakovych, M.S.Storozhenko, Ye.P.Puhachevska, A.G.Dovgal. – K.: NAU, 2014. – 76 p.

3.1.8. Aircraft Ground Support Equipment and Airport Technical Equipment Operation: Manual / O.M.Bilyakovych, M.S.Storozhenko, Ye.P.Puhachevska, A.G.Dovgal. – K.: NAU, 2014. – 120 p.

3.1.9. Технологии наземного обслуживания воздушных судов: Лабораторный практикум для студентов-иностранцев / сост. О.Н.Билякович, А.В.Данилейко, Л.Г.Билякович – К.: НАУ-друк., 2017. – 68 с.

3.1.10. Солтус А. П. Теория эксплуатационных свойств автомобиля. М.: Транспорт, 2004. - 265 с.

3.1.11. Эльвик Рунэ, Боргер Мюнсен Аннэ, Ваа Трулс Справочник по безопасности дорожного движения.– М.: Транспорт, 2001. - 638 с.

3.1.12. Волков В. П., Вільський Г. Б. Теорія руху автомобіля. – Х.: ХНАДУ, 2010. - 250 с.

3.3. Internet resources

3.3.1. http://www.asmap.org.ua.

3.3.2. https://books.google.com.ua/books.

3.3.3. http://tbncom.com/publ/avtomobilnye_perevozki_road_transport/.

4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSTMENT AQUIRED

4.1. Students' work on the course and obtained knowledge and skills are credited according to the points given in table 4.1.

Table 4.1

3d Semester				
Module №1		**Module №2**		Max points
Type of academic work	Max points	Type of academic work	Max points	
Performing practicals 1.1-1.8	24 (total)	Performing practicals №2.1-2.7	21 (total)	
Performing tests	10 (total)	Performing tests	13 (total)	
For admission to perform module reference test № 1 student has to score ***at least 21 score.***		*For admission to perform module test № 2 student has to score* ***at least 21 score.***		
Module test №1	**10**	Module test №2	**10**	
Total by module №1	**44**	**Total by module №2**	**44**	
Semester Graded Test				**12**
Total by 3d Semester				**100**

4.2. The student receives his/her credit if graded positively (See table 4.2).

Table 4.2

Scores as per work done (national grading scale)

Credits, points					Grades In National Scale
Performing practicals		Performing tests		Performing module test	
№1.1-1.8	№2.1-2.7				
22-24	19-21	9-10	12-13	9-10	Excellent
18-21	16-18	8	10-11	8	Good
15-17	13-15	6-7	8-9	6-7	Satisfactory
Less then 15	Less then 13	Less then 6	Less then 8	Less then 6	Bad

4.3. The points the student receives for single assignment are scored for a module grade records.

4.4. The practical and module test points are scored for a final module grade records (See table 4.3).

Table 4.3

Final module scores as per national grading scale

Module №1	Module №2	Grades in National Scale
40-44	40-44	Excellent
33-39	33-39	Good
27-32	27-32	Satisfactory
Less then 27	Less then 27	Bad

4.5. The final semester module score is the final semester module grade converted into the national grading scale (table 4.4) (in module No 1 it is the same as in table 4.3).

Table 4.4

Final semester module grades as per national grading scale

Grades	National grading scale
79-88	Excellent
66-78	Good
53-65	Satisfactory
less than 53	Bad

Table 4.5

Module test grades as per national grading scale

Grades	National grading scale
11-12	Excellent
9-10	Good
7-8	Satisfactory
less than 7	Bad

4.6. The final semester module and exam grades are scored for the final semester grade converted into national and ECTS grading scales (табл. 4.6).

Table 4.6

Final semester grade as per national and ECTS grading scale

Grades	National grading scale	Оцінка за шкалою ECTS	
		Grade	Explanation
90-100	**Excellent**	**A**	**Excellent** (highest score for semester performance with few mistakes)
82-89	**Excellent**	**B**	**Very good** (above average level with few mistakes)
75-81		**C**	**Good** (generally good performance with some serious mistakes)
67-74	**Satisfactory**	**D**	**Satisfactory** (not bad, but few pitfalls)
60-66		**E**	**Acceptable achievement** (satisfies minimum criteria)
35-59	**Unsatisfactory**	**FX**	**Bad** (module test must be repeated)
1-34		**F**	**Bad** (course must be repeated)

4.7. The final semester grades in national and ECTS scales are submitted to the credit-exam reports, student's record book and academic registry.

4.8. The example of final semester grade entries in student's record book and academic registry: ***92/Excel./A, 87/Good/B, 79/Good/C, 68/Satis./D, 65/Satis. /E*** etc.

4.9. The final course grade is the same as the final semester grade.

The final course grade is recorded to the Diploma Supplement.

(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 введення зміни
	Зміненого	Заміненого	Нового	Анульо-ваного			

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				
Узгоджено				