MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL AVIATION UNIVERSITY
Faculty of Air Navigation, Electronics and Telecommunications
Aviation English Department

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«28» 09 2021

APPROVED
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_____ Anatolii POLUKHIN
«12» 10 2021

Quality Management System
COURSE TRAINING PROGRAM
on
«Professional Foreign Language»

Educational and Professional Programs: "Complexes of aerobatic and navigation equipment"
"Avionics computer design"
Field of study: 17 "Electronics and telecommunication"
Speciality: 173 "Avionics"

Training Form	Se me-ster	Total (hours/ credits ECTS)	Lect ures	Practi-cals	Lab. clas.	Self-study	HW/ CGP	TP/CP	Semester Grade
Full-time	1-2	135/ 4,5	.....	68	–	67	.....	–	1- credit 2- exam

Indexes: CB -2-173-1/21-1.3; CB-2-173-2/21-1.3

Course Training Program on «Professional Foreign Language» is developed on the basis of the Educational and Professional Programs on "Complexes of aerobatic and navigation equipment", "Avionics computer design", Bachelor Curriculum and Extended Bachelor Curriculum № СВ-2-173-1/21; СВ-2-173-2/21; ECB-2-173-1/21; ECB-2-173-2/21; for Speciality 173 «Avionics» and corresponding normative documents.

Developed by:

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Discussed and approved by the Aviation English Department, Minutes № 10 of "30" August 2021

Head of the Department _____ N.Pazyura

Discussed and approved by the Graduate Department for Educational and Professional Programs "Complexes of aerobatic and navigation equipment", "Avionics computer design", for Speciality 173 «Avionics» – Avionics Department Minutes № 12 of «06» 09 2021.

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«01» 09 2021

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Contents:

INTRODUCTION

Course Training Program on «Professional Foreign Language» 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 "Professional Foreign Language" is the theoretical and practical basis of the set of knowledge and skills that form the profile of a specialist in the fields of Electronics and telecommunications (Speciality «Avionics»).

The purpose of teaching the subject is to acquire foreign language communication skills in a separate field of *professional activity*; to improve verbal communication and problem-solving skills; to study the specialized aviation terminology; to get acquainted with the latest achievements of science and technology in the field of Electronics and telecommunications.

The tasks of the subject:

- preparing students for effective communication in their academic and professional environment;
- formation of communicative language competencies in real situations of academic and professional activity of future technical specialists;
- achieving the proficiency at the B1 level, which is the standard for obtaining a bachelor's degree.

1.2. Learning outcomes the subject makes it possible to achieve:

As a result of studying this subject, the student must acquire the following learning outcomes (in complex with other educational components):

- be able to think critically the main theories, principles and methods in the professional activity;
- communicate freely any professional issues in official and foreign languages orally and in writing;
- be able to learn new knowledge, advanced technologies and innovations, find new non-standard solutions and means of their implementation in the process of communication with colleagues.

1.3. Competences the subject makes it possible to acquire:

As a result of studying this subject, the student must acquire the following competencies (in particular, in combination with other educational components):

- ability to communicate in a foreign language;
- ability to learn and master modern knowledge;
- ability to search, process and analyze information from various sources;
- knowledge and understanding of the subject area and understanding of professional activity;
- ability to search, process and analyze information from various sources and ability to work in a team.

1.4. Interdisciplinary Connections

This subject is based on knowledge of such subjects as "Higher Mathematics", "Physics", "Aircraft Control Systems", “Aviation Base” and is the basis for the study of further subjects, namely: "Electrical and Technical Avionics base", "Theory of Automatical Control" etc.

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 "Aviation. The International Civil Aviation Organization. Aircraft and Helicopter Structure".

Module № 2 "Aircraft Maintenance", which are logically complete, relatively independent, holistic part of the subject, learning of which provides module test and analysis of its performance.

2.2. Modular structuring and integrated requirements for each module

Module №1 "Aviation. The International Civil Aviation Organization. Aircraft and Helicopter Structure".

Integrated requirements to the module №1:

(know the terminology of the specialty, be able to use basic grammatical constructions in speech and in writing, have the ability to communicate in a foreign language on the topics of the module)

Topic 1. History of aviation. Reading text on the theme, a discussion of the comprehension of the text. Work with audio files related to the topic.

Topic 2. Types of aircraft.

An overview of aircraft types. Working with audio files due to the topic

Topic 3. Types of flights.

Explore the types of flights. Reading texts on the theme. Work with audio files related to the topic.

Topic 4. The world's international airlines. Airport.

Analysis of the structure of airports in the world. Delineation of responsibilities at the airport. reading and oral report about international airlines in Ukraine. Passengers' services. Airport markings and airfield service transportation. An overview of aircraft navigation lights. Reading text on the subject, making analysis with expression own ideas. Work with audio files related to the topic.

Topic 5. The International Civil Aviation Organizations ICAO, IATA, IFALPA, FAA, EUROCONTROL

Analysis of the activities of International Civil Aviation Organization, an oral discussion of the topic. An oral report on the functioning of the State Aviation Administration of Ukraine. Work with audio files related to the topic

Topic 6. Aircraft structure. The fuselage. The chassis. Wings. Tail unit.

Analysis of the structure and functions of structural components of the aircraft and its demonstration in the training hangar of NAU. Work with audio files related to the topic.

Topic 7. Aerodynamic surfaces

Explore the work and functions of the aerodynamic surfaces of the aircraft and its demonstration in the training hangar of NAU. Reading text on the subject, writing analysis with expression own ideas. Work with audio files related to the topic.

Topic 8. Aircraft flight control system

Detailed analysis of flight control system, oral report. Work with audio files related to the topic.

Topic 9. The helicopter structure

Analysis of the helicopter structure and its demonstration in the training hangar of NAU. Reading text on the theme. Work with audio files related to the topic.

Topic 10. Flight instruments.

The analysis of flight instruments with detailed discussions of equipment functions. Oral report. Work with audio files related to the topic.

Module №2 "Aircraft Maintenance".

Integrated requirements of the module №2: *(know the terminology of the specialty, be able to use basic grammatical constructions in speech and in writing, have the ability to communicate in a foreign language on the topics of the module)*

Topic 1. Types of engines. Analysis of engine operating principles. Main reasons for engine failure.
A detailed overview of the engines types of aircraft with its demonstration of the hangar NAU.

Topic 3. Aircraft engine maintenance. Analysis of engine operating systems.
An oral discussion. Oral report on the related topic. Work with audio files related to the topic.

Topic 4. Aircraft Engine Lubrication.
Major functions do lubricants perform in aviation engines. Benefits of using a lubricant that cleans the engine. Work with audio files related to the topic.

Topic 5. Aircraft fuel system
Single-engine aircraft gasoline fuel system. Multi-engine aircraft fuel system. Turbine fuel system. Work with audio files related to the topic.

Topic 6. Aircraft fire protection systems
Fire and overheat protection systems for commercial and military aircraft. A range of advanced fire detection, extinguishing and control technologies to protect power plants, auxiliary power units, cargo bays, crew bays, dry bays and occupied spaces in extreme environments.

Topic 7. Aircraft Electrical Systems
Basic Aircraft Electrical Systems. Advanced Aircraft Electrical Systems.

Topic 8. Air condensation system and ice protection system.
Importance of reliable operation of air condensation system in flight. De-icing measures and procedures to prevent de-icing of aircraft**.**

Topic 9. Aircraft hydraulic systems.
Devices using hydraulic systems in aircraft. Principles of operation. Parts of the power systems.

Topic 10. Signal lights from the plane.
Overview of types of aircraft signal lights. Reading text on subject, writing analysis with opinion. Listening to audio material on the subject**.**

Topic 11. Pre-flight training for the plane.
Technical inspection of the aircraft. Logbook.

2.3. Training schedule of the subject

№	Theme (thematic section)	Total, hour		
		Mode of study: Full-time education		
		Total	practical	Self-study
1	2	**3**	4	5
Module №1 "Aviation. The International Civil Aviation Organization. Aircraft and Helicopter Structure".				
1.1	History of aviation	**1 semester**		
		4	2	2
1.2	Types of aircraft	4	2	2
1.3	Types of flights	4	2	2
1.4	The world's international airlines	4	2	2
1.5	Airport. Its structure	4	2	2
1.6	Delineation of responsibilities at the airport	4	2	2
1.7	The International Civil Aviation Organizations	4	2	2
1.8	Analysis of the activities of International Civil Aviation Organization	4	2	2
1.9	Aircraft structure	4	2	2
1.10	Analysis of the structure and functions of structural components of the aircraft	3	2	1
1.11	Aerodynamic surfaces	3	2	1
1.12	Aircraft flight control system	3	2	1
1.13	The helicopter structure	3	2	1
1.14	Analysis of the helicopter structure	3	2	1
1.15	Flight instruments	3	2	1
1.16	The analysis of flight instruments	3	2	1
1.17	Module test №1	3	2	1
Total by the module №1		**60**	**34**	**26**
Module №2 "Aircraft Maintenance"				
2.1	Types of engines	**2 семестр**		
		5	2	3
2.2	Main reasons for engine failure	5	2	3
2.3	Aircraft engine maintenance	5	2	3

2.4	Aircraft types of engines	5	2	3
2.5	Aircraft Engine Lubrication	5	2	3
2.6	Aircraft fuel system	5	2	3
2.7	Aircraft fire protection systems	5	2	3
2.8	Aircraft Electrical Systems	4	2	2
2.9	Advanced Aircraft Electrical Systems	4	2	2
2.10	Air condensation system	4	2	2
2.11	Computer viruses and malware	4	2	2
2.12	Antivirus programs.	4	2	2
2.13	Importance of reliable operation of air condensation system in flight	4	2	2
2.14	Ice protection system	4	2	2
2.15	De-icing measures and procedures to prevent de-icing of aircraft	4	2	2
2.16	Aircraft hydraulic systems	4	2	2
2.17	Module test №2	4	2	2
	Total by the module №2	**75**	**34**	**41**
	Total by the subject	**135**	**68**	**67**

2.4. Question 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 CONSEPTS 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. Evans Virginia, Dooley Jenny, Espaza Jacob. Civil Aviation. – Express Publishing, 2012 – 108 p.

3.2.2. Foreign Language (English) : Method Guide to self-study for students of speciality 173 “Avionics”/ Compiler: N.S.Zelinska. – K.: NAU, 2017. – 64 p.

3.2.3. Moir Ian, Seabridge Allan. Civil Avionics Systems. – Edmunds: Professional Engineering Publishing Ltd, 2003. – 396 p.– (AIAA Education Series)

3.2.4. English for Aviation Personnel. Vocabulary. Grammar. Petrashuk. Aerolingva, 2005 – 140 p.

3.2.5. An introduction to avionics systems (for civil aviation): For teaching purposses only. – б.м.: б.и.,. – 576с.

3.2.6. Zaporozhets V/, Ahmatko M.. Aeroport. 2002 196 p.

3.2.7. Aviatsijno-tehnichna anglijska mova dlja inzhenerno-tehnichnogo skladu. Pid red. Vitrjaka A. Kirovograd. 2010. 116 p.

3.3. Additional Literature

3.2.6. Jenny Dooley, Virginia Evans. Grammarway. Express Publishing. 2012 – 192p.

3.2.7. Tlumachniy slovnyk aviatsijnyh terminiv. Pid red. Kulyk V. NAU. 2007.

3.2.8. Dictionaries by profession.

3.3. Internet Information resource

3.3.1. Educational Professional Program of the subject “Professional Foreign Language”

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. and 4.1.1

Table 4.1. (exam**)**

Kind of Academic Work	Maximum Grade Values	
	Full-time training form	
1 semester		
Module № 1		
Reading and analysis of professionally oriented texts	10	
Listening to the professionally oriented texts	10	
Writing information related to the topic	10	
Monologue speaking based on the topic	10	
Dialogic speaking based on the topic	10	
Preparation of a report on the topic /	20	
For admission to complete module test №1, a student must receive not less than	42	
Carrying out Module Test №1	30	
Total by module №1	100	
Semester Grade	**100**	
Total by the subject	**100**	

The credit rating is determined (in points and on a national scale) based on the results of all types of educational work during the semester.

4.2. Completed types of educational work are credited to the student, if he received a positive rating for them (Table 4.1).

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 sum of the final semester modular and examination ratings, in points, is the final semester rating, which is converted into grades on the national scale and the ECTS scale (Annex 4).

In the case of differentiated credit, the final semester rating is converted into a grade on the national scale and the ECTS scale (Annex 4).

Table 4.1.1 (credit)

Kind of Academic Work	Maximum Grade Values Full-time
2 **semester**	
Module № 2	
Reading and analysis of professionally oriented texts	10
Listening to the professionally oriented texts	10
Writing information related to the topic	10
Monologue speaking based on the topic	10
Dialogic speaking based on the topic	10
Module Test №2 Test (homework)	10
For admission to complete module test №2, a student must receive not less than	30
Total by module №2	**80**
Semester Grade	**20**
Total by the subject	**100**

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

4.6. The final rating of the subject is equal to the final semester rating. The specified final rating assessment in the subject is entered in the Diploma Supplement.

4.7. The final rating of the subject is defined as the arithmetic mean of the final semester ratings in points (in this subject - for the first and second semesters) with its subsequent transfer to grades on the national ECTS scale.

The specified final rating assessment in the subject is entered in the Diploma Supplement.

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				
Узгоджено				