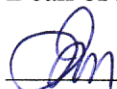


MINISTRY of EDUCATION and SCIENCE of UKRAINE
National Aviation University
 Aerospace Faculty
 Airport Technologies Department

AGREED

Dean of Aerospace Faculty

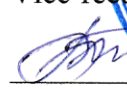


Mykola KULYK

« 10 » 05 2023

APPROVED

Vice-rector for Academics



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« 10 » 05 2023



Quality Management System

PROGRAM
of the Research Activities in the Field of Airport Technologies

Educational Professional Program: Airport Technologies and Technical Equipment

Field of study: 27 Transport

Specialty: 272 Aviation Transport

Form of training	Course	Semester	Total (hours / ECTS credits)	Self-study	Form of semester control
Full-time	1	2	135/4,5	135	Graded Test 2s

Index: ECM-1-272-2/21-2.2.1.1

QMS NAU RAF 07.02.06-02-2023

Kyiv 2023



The Program of the Research Activities in the Field of Airport Technologies was developed on the basis of Extended Curriculum ECM-1-272-2/21 approved 28.08.2021 for the Specialty 272 «Aviation Transport», Educational and Professional Program: «Airport technologies and technical equipment».

Developed by:
Professor of
Airport Technologies Department


Oleksandr TAMARGAZIN

Discussed and approved by the Graduate Department for the Educational Professional Program «Airport technologies and technical equipment», the Specialty 272 «Aviation Transport» – Department of Airport Technologies, Minutes № 3 of “27” 04 2023.

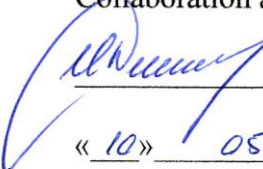
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«10» 05 2023

Document level – 3b

The planned term between revisions – 1 year

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CONTENT

	page
1. Information about the specialty and the educational and professional program.....	4
2. Information about practices bases.....	4
3. Practice goals	4
4. Purpose of practice.....	4
5. General competences	5
6. Professional competences	5
7. Organization of practice.....	5
8. Thematic plan of practices	6
9. Results of practice.....	6
10. Information sources.....	7
11. The form of evaluation of the passing of practice according to the regulation about ERS	8



1. Information about the specialty and the educational and professional program.

The training of seekers of higher education in specialty 272 "Aviation Transport" is aimed at training of specialists capable of solving complex specialized tasks and practical problems of the functioning of aviation transport. The theoretical content of the subject area consists of terms, concepts, principles of development, production, operation, maintenance and repair of aviation transport objects. During the training of seekers, the methods of experimental and theoretical research of objects and processes on aviation transport are used, and devices and instruments for measuring of physical quantities and parameters are used for training in order to obtain the characteristics of objects of aviation transport; full-scale samples or models of aviation transport objects; regulatory and technical documentation and objects of aviation transport; specialized software.

Specialists of the specialty 272 "Aviation transport", EPP "Airport Technologies and Technical Equipment" acquire knowledge and practical skills in the theory and practice of development and management of technological processes at the airport, operation of aviation ground equipment and airport equipment. The modern development of aviation transport requires special attention during the training of the specialists, to study modern operational documentation, national and international legislative, regulatory and legal framework on the functioning of elements of aviation transport; theories, models and principles of decision-making during the management of technological processes at the airport.

2. Information about practices bases.

Bases of scientific research practice in the field of airport technologies can be airports and aviation enterprises, organizations and institutions of any form of ownership whose profile meets the requirements for the implementation of the practice program.

3. Practice goals.

The goals of the practice are to acquire for seekers of higher education practical initial knowledge, abilities, and skills necessary for conducting scientific research in the field of aviation transport in the field of work technologies and technological equipment of airports; instilling of an interest for seekers of higher education in future work in their profession, as a result the seeker of higher education must:

To know:


- requirements of relevant international standards and practices regarding aviation transportation;
- methods and means of detection, management and identification of risks in aviation transport;
- methods and technologies for assessing the technical condition of aviation ground equipment and airport equipment;
- methodology for determining the main reliability parameters of aviation ground equipment and airport equipment;
- methods and technologies of renewing of the technical condition of aviation ground equipment and airport equipment.

To be able:

- to study the main characteristics of the constituent elements of aviation ground equipment and airport equipment;
- to maintain the components and elements of aviation ground equipment and airport equipment;
- to use control and measuring devices to determine the necessary parameters of the elements of aviation ground equipment and airport equipment.

4. Purpose of practice.

The purpose of scientific research practice in the field of airport technologies is to consolidate and deepen of the theoretical knowledge obtained by seekers of higher education in the process of

	Quality Management System Program of the Research Activities in the Field of Airport Technologies	Document Code	QMS NAU RAF 07.02.06-02-2023
		Page. 5 of 10	

learning; mastering the methods of collecting, analyzing and summarizing of scientific and technical information for choosing the topic of the qualification work; mastering the methodology of scientific research; acquisition of practical skills in the use and maintenance of aviation ground equipment and airport equipment; involvement of higher education seekers for independent professional scientific and technical activities.

5. General competences.

As a result of the practice, seekers of higher education acquire the following general competences (GC):

GC01. Knowledge and understanding of the subject area and understanding of professional activities.

GC03. Skills of using of information and communication technologies.

GC04. Ability to conduct research at the appropriate level.

GC05. Ability to search, to process and to analyze information of various sources.

GC06. Ability to identify, to set and to solve problems.

GC07. Ability to make informed decisions.

GC09. Ability to evaluate and to ensure the quality of the performed works.

6. Professional competences.

As a result of the practice, seekers of higher education acquire the following professional competences (PC):

PC01. Ability to develop and to implement scientific and applied projects in the field of air transport, in particular of airport operation and operation of aviation equipment and airport equipment.

PC02. Ability to apply a systematic approach to solving engineering interdisciplinary problems in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment.

PC03. Ability to take into account legal, social, environmental, ethical, economic and commercial aspects that affect the adoption and implementation of decisions in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment.

PC04. Ability to integrate knowledge and to solve complex scientific and industrial problems in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment, taking into account the wider interdisciplinary engineering context.

PC05. Ability to manage technological processes in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment, which are complex, unpredictable and require new strategic approaches.


PC06. Ability to implement modern technologies, to research, to analyze and to improve technological processes in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment.

PC07. Ability to choose optimal materials, equipment and measures for the implementation of the latest technologies at air transport.

7. Organization of practice.

The Department of Airport Technologies provides organizational, educational and methodological guidance and implementation of the program of scientific research practice in the field of airport technologies. The distribution of higher education seekers according to specific practice bases, the time they stay there and the appointment of practice supervisors is carried out by the graduation department, taking into account the orders of enterprises, institutions and organizations that can provide the higher education seeker with a place of practice. This distribution is formalized by the order of the rector of the university no later than a month before the start of the practice.

Scientific research practice in the field of airport technologies is carried out in accordance with

	Quality Management System Program of the Research Activities in the Field of Airport Technologies	Document Code	QMS NAU RAF 07.02.06-02-2023
		Page. 6 of 10	

the contract between the objects of practice and the university, in which the conditions of the practice and the order of calculations are agreed upon in accordance with the existing economic conditions.

Experienced scientific-pedagogical employees of the department, who take a direct part in the educational process, are involved in the practice management. Management of the practice of higher education seekers at the immediate places of practice (structural divisions of the enterprise, laboratories, etc.) is carried out by practice managers of production.

Responsibilities of the seekers of higher education, the head of practice from the university and from the practice base are covered in Section 4 of the Regulations about the organization of practice for seekers of higher education of the National Aviation University QMS NAU P 03.01(20)-02-2021.

Seekers of higher education must strictly adhere to the rules of labor protection and fire safety adopted on the basis of practice, with mandatory passing of instruction (introductory and at each specific place of work).

During practice, various forms and methods of current control are provided. Daily current control is carried out by the head of the practice base and consists of control of the start and end time of work, information on the personal participation of each seeker of higher education in the performing of the required volume of work, compliance with the requirements of safety and labour precaution and safety instructions at workplaces, a practice diary etc.

The final control consists in checking the practice diary and the report on the performance of an individual task within the practice program, which must be prepared by the student of higher education personally and drawing up a differential assessment.

The final control consists of checking the practice diary and the report about the performing of an individual task in accordance with the practice program, which must be prepared by the seeker of higher education and graded test passing.

8. Thematic plan of practices.

Thematic of individual tasks during practice can be as follows:

- research of a specific technological process for ground maintenance of an aircraft of a given type;
- research of a specific technological process for servicing of passengers and their luggage at the airport;
- research of a specific technological process for provision of the airport with fuel and lubricants;
- research of a specific technological process for airfield maintenance.
- development of measures to increase the efficiency of the use of aviation ground equipment and airport equipment;
- analysis of the competitiveness of the researched technology.


9. Results of practice.

As a result of the practice, seekers of higher education acquire the following results - program training outcomes (PTO).

PTO01. Specialized conceptual knowledge, which includes modern scientific achievements in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment and is the basis for original thinking and research conducting.

PTO02. To apply modern methods of scientific research, organisation and planning of the experiments, digital technologies, methods of data analysis to solve complex problems in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment.

PTO03. To solve complex problems of creation, operation, maintenance, repair and utilization of objects of air transport, in particular of aviation ground equipment and airport equipment, including at the border with related fields, engineering sciences, physics, ecology and economy.

	Quality Management System Program of the Research Activities in the Field of Airport Technologies	Document Code	QMS NAU RAF 07.02.06-02-2023
		Page. 7 of 10	

PTO08. To organise and to manage the work of a primary production, design or research unit in the field of air transport, in particular of airport operation and operation of aviation ground equipment and airport equipment, to evaluate the effectiveness and efficiency of staff and the unit.

PTO09. To develop and to analyse physical, mathematical and computer models related to the creation, operation, maintenance and repair of air transport, in particular of aviation ground handling facilities and airport equipment.

PTO10. To communicate knowledge, conclusions, decisions and the basis for their adoption to specialists and non-specialists in a clear and unambiguous manner.

PTO13. To make effective decisions on functioning of air transport, in particular of airport and the operation of aviation ground equipment and airport equipment, including in difficult and unpredictable conditions; to forecast their development; to identify factors that affect the achievement of goals; to analyze and to compare alternatives; to assess risks and possible consequences of decisions.

PTO14. To ensure the quality of production and operation in the field of air transport, in particular of airport functioning and operation of aviation ground equipment and airport equipment.

PTO15. To search necessary data in scientific literature, databases and other sources, to analyze, to evaluate and to use these data.

PTO16. To determine the properties and characteristics, to calculate the parameters of air transport, in particular of aircraft ground equipment and airport equipment.

On the basis of the entries in the practice diary, the seeker of higher education prepares a written report on the implementation of the practice program and the individual task, the requirements for which are contained in Section 5 of the Regulation of the organization of practice for seekers of higher education of the National Aviation University QMS NAU P 03.01(20)-02-2021.

10. Information sources.

1. Повітряний кодекс України. Постанова Верховної Ради України.
2. Airport Operations. Norman J. Ashford, Clifton A. Moore, Pierre Coutu, H.P. Martin Stanton. Published by McGraw-Hill Professional. 2021. 605 pages.
3. Managing airports: an international perspective / Anne Graham. Description: Abingdon, Oxon. New York. Routledge, 2018.
4. Airport Handling Manual / IATA.
5. Airport engineering: planning, design, and development of 21st century airports / Norman J. Ashford, Saleh Mumayiz, Paul H. Wright. – 4th ed. – 2011. – 753 p.
6. Doc 9137. Airport Services Manual.
7. Doc 9157. Aerodrome Design Manual.
8. Doc 9284. Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air.
9. Doc 9756. Manual of Aircraft Accident and Incident Investigation.
10. Annex 14, Volume I, Aerodrome Design and Operation.

Taking into account the specifics of the technological processes provided by the enterprise - the basis of practice, special domestic and international standards, enterprise standards, descriptions, visual guides, manuals for technical operation, etc. can be added to the list of information sources.

11. The form of evaluation of the passing of practice according to the regulation about ERS.

The evaluation of individual types of educational work performed by the seeker of higher education is carried out in points according to table 1.

Table 1

The content of the works to be evaluated as a result of the scientific research practice in the field of airport technologies and the corresponding number of points

№	Type of educational work	Maximum quantity of points
1	Organizational meetings. Familiarization with the current instructions on labor and environmental protection at the enterprise – a base of practices.	10
2	Instruction on the organization of security measures on the territory of the enterprise.	10
3	Evaluation of the validity of the application of the methodology and methods of planning and organization of scientific researches.	10
4	Assessment of practical skills in the formulation of scientific problems, conclusions and justification of research goals.	10
5	Complex research of a concrete technological process at the airport.	10
6	Forming of a model for improving of a specific technology used at the airport.	10
7	Development of measures to increase the efficiency of the using of aviation ground equipment and airport equipment.	10
8	Analysis of the competitiveness of the researched technology.	10
9	Studying of the current aviation legislation of Ukraine, regulatory and instructional materials on the organization of operation of aviation ground equipment and airport equipment.	10
10	Arrangement and defending of the report and passing of the graded test.	10
	Total for the graded test	100

The credit rating grade for practice is determined (in points and due to a national scale) based on the results of the performance of all types of work provided for in the practice program.

Performed types of educational work are credited for the seeker of higher education, if he received a positive rating grade due to these performed types of educational work.

The final rating grade from practice is converted into a grade according to the national scale and ECTS scale.

The final rating grade from practice in points, according to the national scale and the ECTS scale, is entered in the credit and examination report, in the study card and individual curriculum of the student, for example, as follows: **92 / Excellent / A, 87 / Good / B, 79 / Good / C, 68 / Sat./D, 65 / Sat./E**, etc.

The final rating grade from practice is entered in the Diploma Supplement.



(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				