(F 03. 02-110)

#### MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE NATIONAL AVIATION UNIVERSITY

Faculty of Architecture, Civil Engineering and Design Computer Technologies of Airport Construction and Reconstruction Department

AGREED Dean of the Faculty Viktor KARPOV «08 2022





Quality Management System

#### **COURSE TRAINING PROGRAM**

on

"Organization of Construction"

Educational-Professional Program: Field of study: Specialty: "Industrial and Civil Engineering"

19 "Architecture and Construction"

192 "Building and Civil Engineering"

Form of training	Sem.	Total (hours/ ECTS credits)	Lec.	Prac.	Lab.	Self- study	Home- works, control (home) works	CP/ TP	Form of con- trol
Full-time	8	150/5,0	28	-	42	80	-	СР	Examination 8 <sup>th</sup> semester
Part-time	-	-	-	-	-	-	-	-	-

Index: CB-5-192-1/22-2.1.21

QMS NAU CTP 10.01.04-01-2022

Quality Management System	Document	QMS NAU	
Course Training Program	code	CTP 10.01.04-01-2022	
ALL MCALCON PO	on "Organization of Construction"		Page 2 3 14

The Course Training Program on "Airport Buildings and Structures" is developed on the basis of the Educational-Professional Program "Industrial and Civil Engineering", Bachelor Curriculum and Extended Curriculum № CB–5–192–1/22, № ECB–5–192–1/22 for training higher education seekers of the Bachelor degree of specialty 192 "Building and Civil Engineering" and corresponding normative documents.

Developed by: Associate professor of Computer Technologies of Airport Construction and Reconstruction Department

Hennadii Talavira

Professor of Computer Technologies of Airport Construction and Reconstruction Department

Atunt Anton Makhinko

Discussed and approved by the Graduate Department for the Specialty 192 "Building and Civil Engineering" (Educational Professional Program "Industrial and Civil Engineering") – Computer Technologies of Airport Construction and Reconstruction Department, Minutes  $N_{\rm e}$  of 23.10.2022

Guarantor of the Educational and Professional Program

<u>Man</u> Nataliia KOSTYRA *Man* Oleksandr LAPENKO

Head of the Department

Vice Rector on International Collaboration and Education. Iryna ZARUBINSKA 2022

Level of document – 3b Planned term between revisions – 1 year Master copy



#### CONTENTS

INTRODUCTION	4
1. EXPLANATORY NOTE	4
1.1. Role, goal and objectives of the academic discipline	4
1.3. Competencies obtained through the academic discipline	5
2. PROGRAM OF THE ACADEMIC DISCIPLINE	5
2.1. Content of the academic discipline	5
<ul><li>2.3. Thematic plan of the academic discipline</li></ul>	
3. TRAINING MATERIALS FOR THE DISCIPLINE	
3.1. Teaching Methods	11
3.2. Recommended literature	11
3.3. Internet information resources	
<b>4.</b> KATING SISIENI OF KNUWLEDGE AND SKILLS ASSESSMENT	14



#### **INTRODUCTION**

The Course Training Program of the academic discipline «Organization of Construction» was developed on the basis of the "Methodological recommendations for the development and execution of the syllabus of educational discipline of full-time and part-time forms of training", approved by rector's order No. 249/roz. of 29.04.2021 and relevant regulatory documents.

#### **1. EXPLANATORY NOTE**

#### 1.1. Role, goal and objectives of the academic discipline

The academic discipline "Organization of construction" occupies a leading place in the process of professional training for the qualified performance of professional duties of specialists in the specialty: "Building and Civil Engineering".

**The role** of the discipline is the theoretical and practical basis of the set of knowledge and skills that form the profile of a specialist in the field of airport construction.

**The goal** of teaching the discipline is to master the applicants of higher education professional knowledge in the field of construction organization and the ability to apply them in future practical activities in construction organizations.

**The objectives** of the discipline is to form knowledge of the modern theory and practice of the organization of construction in the construction of buildings and structures among applicants for higher education.

#### **1.2. Educational outcomes of the academic discipline**

As a result of studying the discipline (EC 26, EC 44), a higher education applicant acquires:

PLO4 – Design and implement technological processes of construction production, using appropriate equipment, materials, tools and methods;

PLO5 – Use and develop technical documentation at all stages of the life cycle of construction products;

PLO7 – Perform data collection, interpretation and application, including through the search, processing and analysis of information from various sources;

PLO10 – Ability to organize work on supervision and control in production during the construction and operation of buildings and structures;

PLO12 – Have in-depth cognitive and practical skills/attainments, mastery and innovation at the level necessary to solve complex specialized tasks in the field of construction and civil engineering;

PLO14 – Ensure reliable and safe operation of building constructions, structures and engineering networks;

PLO17 – Mastering work skills to work effectively independently (course and diploma design) or in a group (laboratory classes, including leadership skills in their implementation), the ability to obtain the desired result in a limited time with an emphasis on professional integrity and the exclusion of plagiarism.

## 1.3. Competencies obtained through the academic discipline

<u>Integral competence:</u> The ability to solve complex specialized tasks and practical problems in the field of construction or in the learning process, which involves the application of theories and methods of determining the strength, stability, durability, reliability and safety of buildings and structures; application of information technologies, software complexes, automated design systems.

<u>General competences</u>: GC2 - Knowledge and understanding of the subject areaand professional activity; <math>GC3 - Ability to communicate in the state language both orally and in writing; GC5 - Ability to use information and communication technologies; GC6 - Ability to independently acquire knowledge by searching, processing and analyzing information from various sources; GC7 - Interpersonal skills.

Professional competences: PC1 – Ability to use conceptual scientific and practical knowledge of mathematics, chemistry and physics to solve complex practical problems in construction and civil engineering; PC2 – Ability to critically understand and apply basic theories, methods and principles of economics and management for rational organization and management of construction production; PC3 - Ability to design building structures, buildings, structures and engineering networks (according to specialization), taking into account engineering and resource-saving measures, legal, social, environmental, technical and economic indicators, scientific and ethical aspects, and modern requirements of regulatory documentation in the field of architecture and construction, environmental protection and labor safety; PC4 – Ability to choose and use appropriate equipment, materials, tools and methods for designing and implementing technological processes of construction production; PC6 - Ability to perform engineering activities in the field of construction, compilation and use of technical documentation; PC7 – Ability to take responsibility for developing and making decisions in the field of architecture and construction in unpredictable work contexts; PC8 -Awareness of the principles of designing countryside territories; PC10 – Ability to ensure the organization of the construction of buildings and structures of industrial and civil purposes using modern construction materials and energy-efficient technologies.

#### **1.4. Interdisciplinary links**

This discipline is based on knowledge of such disciplines as "Construction Technology", "Building Technical Equipment", and is the basis for the study of further disciplines, namely: "Organization of Construction (Special Course)" and the performance of qualifying work.

#### 2. PROGRAM OF THE ACADEMIC DISCIPLINE

#### 2.1. Content of the academic discipline

The educational material of the discipline "Organization of Construction" is structured on a modular basis and consists of three educational modules, namely:

educational module 1 "Basic provisions for organization and planning",

- educational module 2 "Master plans. Organization of transport in construction", which is a logically complete, relatively independent, integral part of the curriculum, mastering of which involves a module test and results analysis.

CHANDING T	Quality Management System	Document	QMS NAU
	Course Training Program	code	CTP 10.01.04-01-2022
MONAXXIII	on "Organization of Construction"		Page 6 3 14

Course Project which is performed during the <u>eight</u> semester is a separate third module (educational component EC44).

Course Project (CP) on the subject is performed according to the methodical recommendations approved in an established order, with purpose of deepening the theoretical knowledge and skills acquired by a student in the process of learning of all the educational material of the subject.

#### 2.2. Module structure and integrated requirements for each module

## Module №1 "Basic provisions for organization and planning"

Integrated requirements for module 1: to know: basic principles of the organization of construction; the composition of the construction complex; types and organizational structures of construction organizations; relationships of the main participants in construction; the composition of project documentation; the procedure for approval, examination and approval of design and estimate documentation; the principles of the development of the main parts of the POB and PPR; the basics of the flow organization of construction of various objects;

**be able:** calculate the volumes of construction and installation and special works; select sets of construction machines and small-scale mechanization equipment for the performance of work; develop calendar schedules for certain types of construction and installation works; develop linear and network construction schedules; make specifications, tables, etc. accompanying technical documentation.

# Topic 1. Basic provisions for organization and planning. Construction industry and its organizational structure.

Essence, composition and principles of organization of construction production. Methods of planning. Regulatory and reference base. Capital construction. The structure of construction organizations.

#### Topic 2. Organization of design and surveys in construction.

General provisions and basic principles and stages of design. Choosing a construction site. Design stages and composition of project documentation. Coordination, approval and examination of project documentation. Economic and engineering surveys.

#### Topic 3. Preparation of construction production. Documentation on the organization of construction and execution of works.

The main stages of preparation for construction. General organizational and technical training. Preparation for the construction of the facility. Preparation of the construction organization. Preparation for construction and installation works. Features of the preparation of construction production during reconstruction and technical re-equipment. Design of the organization of construction and execution of works. The composition and content of the construction organization project and the work production project.

#### **Topic 4. Flow methods of construction organization.**

The concept of a flow method of production organization. The essence of the flow organization of construction. The main parameters of construction flows. Classification of construction flows and methods of organization of flow-line production.

On on	Quality Management System Course Training Program	Document code	QMS NAU CTP 10.01.04-01-2022
	on "Organization of Construction"		Page 7 3 14

#### Topic 5. Organizational and technological models.

Types of models. Types of graphs and their features. Network graphs, their basic concepts and elements. Rules and techniques for constructing graph models. Manual and automated calculation. Time scale for network graphs. Optimization of graphs by time and resources.

#### Topic 6. Strategic planning in construction. Annual planning of the construction organization's activities.

Planning system in a construction organization. The essence, meaning and functions of strategic planning. Technology and technique of strategic planning. Implementation and evaluation of the effectiveness of strategies. Planning of the production program. Plan for the development and use of production capacity. Planning of technical development and improvement of economic efficiency. Planning of mechanization, own capital investments, logistics and equipment, auxiliary production, social development, measures for labor protection and rational use of natural resources.

#### Topic 7. Calendar plans for the construction of a complex of buildings and structures. Calendar schedules for the construction of individual objects.

Development of calendar plans for the construction of an industrial enterprise. Development of calendar plans for the development of microdistricts by urban development complexes. Development of calendar plans for the work program of the construction organization. Economic and mathematical methods and computers in solving calendar planning problems. Types of network graphs, the purpose of their development. General principles of calendar planning of construction and reconstruction of construction facilities. Initial data for the design of complex network graphs. Calculation and optimization of the network schedule. Designing the construction schedule of the facility and determining the need for material and technical resources. Technical and economic indicators of calendar and network schedules.

#### Topic 8. Organization of operational planning and dispatching control. Organization of construction in the conditions of reconstruction.

Purpose, types and content of operational plans. Monthly operational plans. Weeklydaily schedules. Organization of control over the implementation of operational plans. The essence, goals and objectives of reconstruction. Classification and features of the organization of reconstruction. Design of reconstruction of buildings and structures.

#### Module №2. "Master plans. Organization of transport in construction" Integrated requirements for module 2:

to know principles of material and technical support of construction by construction machines and transport, organization of quality management and commissioning of facilities; be able develop a construction master plan at different stages of construction of buildings, calculate technical and economic indicators of master plans.

## **Topic 1. Design of construction master plans.**

Types of construction master plans. The basic principles of their design. General site construction master plans. Object construction master plan. Organization of warehouse management. Classification of warehouses. Determining the size and stock of building materials.

## Topic 2. Temporary buildings, structures and engineering networks.

Temporary structures on construction sites. Design of temporary buildings and structures. Organization of temporary water supply and sanitation, energy and electricity supply. Time paths. Placement of lifting machines and mechanisms on the construction site. Hazardous areas during the operation of cranes, hoists and other construction machines. Designing an object construction plan in compressed conditions. The mutual influence of the calendar plan and the construction master plan.

## **Topic 3. Material and technical support of construction.**

Contract and supply agreements. The structure of the tasks of logistics. Organizational forms and principles of procurement. Contract bidding. Bidding. Contracts. Deliveries.

## **Topic 4. Organization of operation of construction machines.**

Tasks of mechanization and complex mechanization of construction and installation works. Organizational forms of operation of the fleet of construction machines. Organization of operation of small-scale mechanization. The basic principles of determining the need for construction machines. Accounting of work and organization of maintenance and repair of construction machines.

## **Topic 5. Organization of transport in construction.**

The importance of transport in construction. Types of transport. Choosing the type of transport and determining the required number of vehicles. Organization of road transport. Organization of transportation by rail and water transport. Application of economic and mathematical methods in solving problems of transportation organization.

## **Topic 6. Construction quality management.**

The concept of product quality. Formation of the quality of construction products and organization of quality control in construction. Commissioning of completed construction projects. Comprehensive quality management system for construction and installation works.

Module № 3. Course Project (CP) is carried out due to the discipline in the eight semester, according to the established procedure mandated guidelines with the aim of deepening into the theoretical knowledge and skills acquired in the process of student learning all the curriculum subjects in design industrial buildings and structures.

Implementation of the CP is an important step in preparing them for the diploma of the future specialist builder. The students receive the skills of project work; look through with regulations, directories and catalogs of typical construction.

Course Project involves for the development of a calendar plan for the construction of an industrial or residential building, an object construction plan at the stage of construction of the aboveground part of the house, drawing up a schedule for the work of mechan-

Quality Manag	Quality Management System	Document	QMS NAU
Course Train	Course Training Program	code	CTP 10.01.04-01-2022
THOMAN WIEROF	on "Organization of Construction"		

isms, supplies of basic materials, structures and semi-finished products, a schedule for the movement of workers during construction, determination of technical and economic indicators. It is necessary to provide such solutions in the project that reduce the time of work, reduce the cost, reduce the complexity of work.

For the successful implementation of the Course Project the student should:

know: requirements of regulatory documents; the basic principles underlying the development of the project of works; design characteristics of buildings of various types; conditions for installation work;

able to: develop an object calendar plan with the construction of a network or linear schedule of work; an object construction master plan at the stage of construction of the aboveground part of the building; to schedule the work of the main construction machines and mechanisms, to develop a schedule for the supply of basic materials of structures and semi-finished products during the construction of the aboveground part of the building.

The volume of the Course Project:

- the explanatory note typed on a computer project material up to 40 pages;
- graphical part of the project done in 1 pages A-1 and 1 pages A-2.
- Time needed for performance of the CP to 45 hours of individual work. . ..

2	.3. Thematic plan of the academic discipline	

			Academic hours							
No		Fu	ll-tin	ne stu	ıdy	Pa	Part-time study			
п/ п	Торіс	Total	Lectures	Labs	Self-study	Total	Lectures	Labs	Self-study	
1	2	3	4	5	6	7	8	9	10	
	Module №1 Basic provisions for organ	izati	on ar	nd pla	annin	ıg				
	Topic 1. Basic provisions for organization and		8 sen	nestei	ſ		-	-		
1.1	planning. Construction industry and its organiza- tional structure.	3	2	-	1	-	-	-	-	
1.2	Lab. 1.1. Analysis of architectural and design solutions to the project.	3	-	2	1	-	-	-	-	
1.3	Lab. 1.2. Determination of the volume of con- struction and installation and special works (excava- tion, construction of the underground part of the building, joints of the underground part, pipelines and cable gaskets in those. underground, protection of underground structures, floor structures, roof structures, facade joints, roofing works).	3	-	2	1	-	_	_	_	
1.4	Topic 2. Organization of design and surveys in construction.	3	2	-	1	-	-	-	-	
1.5	Lab. 1.3. Determination of the volume of con- struction and installation and special works (electri- cal work, heating, plumbing, sewerage; filling open- ings, plastering, installation of elevators, floors, painting, wallpaper work).	3	-	2	1	-	-	-	-	

	Quality Management System Course Training Program			Doo	cument code	t	QMS NAU CTP 10.01.04-01-2022			
BELLEV	MCMXXXIII	on "Organization of Construction"			Page 10 3 14					
	Topic 3	. Preparation of construction production.								
1.6	Docum	entation on the organization of construc-	3	2	-	1	-	-	-	-
	tion and	l execution of works.								
	Lab.	1.4. Drawing up the specification of the								
1.7	mountin	g elements and information on the scope of	3	-	2	1	-	-	-	-
	work.									
	Lab.	1.5. The choice of methods of work and the								
1.8	compos	ition of a set of construction machines. De-	3	-	2	1	-	-	-	-
	terminat	tion of the labor intensity of the work.								
1.0	Topic 4	. Flow methods of construction organiza-	•	_						
1.9	tion .	8	3	2	-	1	-	-	-	-
1 10	Lab.	1.6. Calculation of labor and monetary	•		•	1				
1.10	costs.	5	3	-	2	I	-	-	-	-
1 1 1	Topic 5	. Organizational and technological mod-	•			1				
1.11	els.	0 0	3	2	-	1	-	-	-	-
1 1 2	Lab.	1.7. Duration of individual and specialized	~	1	~	1			<u> </u>	
1.12	types of	work on division.	3	-	2	I	-	-	-	-
	Lab.	1.8. The calculation matrix of the flow								
1.13	method	of construction. Plotting the movement of	3	-	- 2	1	-	-	_	-
	workers	e e e e e e e e e e e e e e e e e e e								
	Topic 6									
1.14	nual pla	3	2	2 -	- 1	-	-	_	-	
	activitie	2S.								
1 1 7	Lab. 1	.9. Calculation of technical and economic			0	1				
1.15	flow ind	licators.	3	-	2	1	-	-	-	-
	Topic 7	. Calendar plans for the construction of a								
1 1 6	complex	x of buildings and structures. Calendar	2	2	1					
1.16	(grid) s	chedules for the construction of individual	3	2	-	1	-	-	-	-
	objects	•								
1.17	Lab.	1.10. Building a linear schedule of work.	3	-	2	1	-	-	-	-
1 10	Lab.	1.11. Construction of a cyclogram of the	-		0	1				
1.18	construc	tion of objects. Building a network graph.	3	-	2	1	-	-	-	-
	Topic 8	8. Organization of operational planning								
1.19	and di	spatching control. Organization of con-	3	2	-	1	-	-	-	-
	structio	n in the conditions of reconstruction.								
1.20	Module	test №1	3	-	2	1	-	-	-	-
		Total for Module №1	60	16	24	20	-	-	-	-
		Module №2 Master plans. Organization of	tran	sport	t in co	onstr	uctio	n		
0.1				8 sen	nester	•		9 ser	nester	<b>(</b>
2.1	Topic 1	. Design of construction master plans.	3	2		1	-	-	-	-
	Lab. 2.1	. General issues of design of construction	-		-					
2.2	master p	blans.	3	-	2	1	-	-	-	-
	Lab. 2.2	2. Calculation of the need for temporary ser-	~	1	~	1			<u> </u>	<u> </u>
2.3	vice bui	ldings and structures.	3	-	2	1	-	-	-	-
	Topic 2	. Temporary buildings, structures and en-	~	~		1			<u> </u>	<u> </u>
2.4	gineerin	ng networks.	3	2		I	-	-	-	-
2.5	Lab. 2.3	Calculation and design of temporary sto-	~	1	~	1			<u> </u>	<u> </u>
2.5	rage fac	ilities and sites.	3	-	2	I	-	-	-	-
2	Topic 3	3. Material and technical support of con-	-	_		1				
2.6	structio	n.	3	2	-	1	-	-	-	-

and a second	Quality Management System Course Training Program on "Organization of Construction"			Doo	cumen code	t	( CTP 1	QMS 1 0.01.0	NAU 4-01-2	2022
ALL	MCMXXXIII ON	on "Organization of Construction"		Page 11 3 14			14	4		
2.7	Lab. 2.4 supply o	Design of temporary water supply and heat of the construction site.	3	_	2	1	-	_	-	-
2.8	Lab. 2.5 works.	5. Design of temporary power supply net-	3	_	2	1	-	-	_	-
2.9	Topic 4 tion ma	. Organization of operation of construc- chines .	3	2	-	1	-	-	-	-
2.10	Lab. 2.6 struction	5. Safety precautions in the design of con- n master plans.	3	-	2	1	-	-	-	-
2.11	Topic 5 tion.	. Organization of transport in construc-	3	2	-	1	-	-	-	-
2.12	Lab. 2.7 struction	7. Installation of mounting cranes on con- n sites.	3	-	2	1	-	-	-	-
2.13	Lab. 2.8 indicato	B. Determination of technical and economic rs of the construction plan.	3	-	2	1	-	-	-	-
2.14	Topic 6	. Construction quality management.	3	2	-	1	-	-	-	-
2.15	Module	test № 2.	3	-	2	1	-	-	-	-
2.16	Control	(home) work (PTS)	-	-	-	-	-	-	-	-
		Total for Module №2	45	12	18	15	-	-	-	-
		Module № 3. Course Pi	rojec	t						
3.1.	Organiza	ation of Construction	45	-	-	45	-	-	-	-
		Total for Module 3	45	-	-	45	-	-	-	_
		Total for Academic Discipline	150	28	42	80	-	-	-	-

#### 2.4. List of questions for exam and final test

The list of questions and the tasks to prepare for the exam are developed by the teacher of the department in accordance with the work program and communicated to the students.

#### **3. TRAINING MATERIALS FOR THE DISCIPLINE**

#### **3.1. Teaching Methods**

When studying the discipline, the following teaching methods are used:

- explanatory-illustrative method;

- method of problem statement;

- reproductive method.

The implementation of these methods is carried out during lectures, demonstrations, independent work, work with educational literature, solving problems in building design.

#### **3.2. Recommended literature**

#### **Basic literature**

3.2.1. Організація будівництва/ С.А. Ушацький, Ю.П. Шейко, Г.М. Тригер та ін.; За редакцією С.А. Ушацького. – К.: Кондор, 2007. – 521 с.

3.2.2. Організація будівельного виробництва: навчальний посібник / А. М. Дорош. – К.: Аграрна освіта, 2011. – 255 с.

3.2.3. Панкевич О.Д. Організація будівництва. Навчальний посібник. – Вінниця: ВНТУ, 2007. – 86 с.

3.2.4. Організація і планування будівництва / В.М. Майданов, Ю.П. Шейко, Г.М. Тригер та ін. За ред. Г.Д. Малишевського та С.А. Ушацького. – К.: Урожай, 1993. – 432 с.

3.2.5. Білецький А.А. Організація і технологія будівельних робіт. – Рівне: НУВГП, 2007. – 202 с.

#### Additional literature

3.2.6. ДБН А.3.1-5:2016 Організація будівельного виробництва. – К.: НДІБВ, 2016.

3.2.7. ДБН А.2.1-1-2008 Інженерні вишукування для будівництва. – К.: УкрНДІІНТВ, 2008.

3.2.7. Посібник з розробки проєктів організації будівництва і проєктів виконання робіт (до ДБН А.3.1-5-96 "Організація будівельного виробництва"). Частина 1. Технологічна та виконавча документація. – К.: НДІБВ, 1997. – 125 с.

3.2.8.МР Г.1-37641918-900:2019 Методичні рекомендації щодо складання проєктів організації будівництва та виконання робіт у дорожньому господарстві. – К.: ДП «ДерждорНДІ»), 2019.

#### **3.3. Internet information resources**

3.3.1. <u>http://iap.nau.edu.ua/index.php/kafedry/komp-yuternikh-tekhnologij-</u> budivnitstva

3.3.2. http://www.lib.nau.edu.ua

3.3.3. <u>www.minregion.gov.ua</u> - Міністерство розвитку громад та територій України

3.3.4. <u>http://online.budstandart.com/ua</u> - сервіс актуальних версій нормативних документів у галузі проєктування, будівництва, охорони праці, пожежної безпеки, екології та енергетики

## 4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSMENT

4.1. Evaluation of certain types of work done by students of the points made in accordance with Table 4.1.

Table 4.1

	Maximu	m Grade		Maxim	um Grade		
Kind of Academic Ac- tivities	Full-Part-timetimestudystudy		Kind of Academic Activities	Full-time study	Part-time study		
		8	semester				
Module №	1		Module № 2				
Carrying out and Defend- ing the laboratory classes	30	-	Carrying out and Defending the laboratory classes	27	_		

DPART D	on	Quality Ma Course Tr "Organizat	nagement Sy raining Prog ion of Const	ystem ram truction"	Document code	AU I-01-2022	
GHUA YHIBER		organizat				Page 13 3 14	
For carrying out a module test 1 a student must re- ceive not less than		18	-	For carrying out a 2 a student must r than	For carrying out a module test 2 a student must receive not less than		
Carrying out a №1	module test	12	-	Carrying out a mo	dule test №1	11	-
	- Carrying out the control (home) work				-	-	
Total for modu	ule №1	42	-	Total for module	38	-	
	ſ	Fotal for 1	modules N	<b>@1, №2</b>		80	-
		Semeste	er examina	ation	20	-	
	Т	otal for a	cademic d	iscipline		1	.00
			Ν	Iodule №3			
Vind	of Acadamia	A ativitian			Maximum (	irade	
Kind	of Academic	Activities		Full-	time and Part	-time study	
Performance of	a Course Pro	ject			60		
Defense of a Course Project			40				
Performance and defense of a Course			100				

A Semester Grade is determined (in points and in the National Scale) as a result of performing all kinds of educational work during the semester.

4.2. A student is considered to have passed the module if both his/her Current Module Grade and Module Test Grade are positive.

4.3. The Semester Module Grade is calculated as the sum of the Total Module Grades.

4.4. The Semester Module Grade and the Examination Grade together make up a Total Semester Grade which is calculated according to the National Scale and the ECTS Scale.

4.5. The Total Semester Grade is entered into the Examination Register and into a student's record book in values, National Scale grades, and ECTS Scale grades.

4.6. The Total Semester Grade is entered into a student's record book, for example: 92/Ex/A, 87/Good/B, 79/Good/C, 68/Sat/D, 65/Sat/E, etc.

4.7. The Total Module Grade for the Course Project except the Examination Register is also entered into a student's record book, for example: 92/Ex/A, 87/Good/B, 79/Good/C, 68/Sat/D, 65/Sat/E, etc.

4.8. The Total Grade of subject that is taught during one semester is equal the Total Semester Grade. The Total Semester Grade is entered into a student's Diploma Supplement.

4.9. The Total Semester Grade of the subject is determined as the arithmetic average grade of the total semester grades in points (for the fourth semester for this subject) with its further transfer into the National Scale and ECTS Scale. The indicated Total Semester Grade of the subject is entered in the Diploma Supplement.

	Quality Management System Course Training Program on "Organization of Construction"	Document code	QMS NAU CTP 10.01.04-01-2022
		Page 14 3 14	

 $(\Phi 03.02 - 01)$ 

#### АРКУШ ПОШИРЕННЯ ДОКУМЕНТА

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

 $(\Phi 03.02 - 02)$ 

# АРКУШ ОЗНАЙОМЛЕННЯ З ДОКУМЕНТОМ

№ пор.	Прізвище, ім'я, по батькові	Підпис ознайомленої особи	Дата ознайом- лення	Примітки

 $(\Phi 03.02 - 04)$ 

# АРКУШ РЕЄСТРАЦІЇ РЕВІЗІЇ

№ пор.	Прізвище, ім'я, по батькові	Дата ревізії	Підпис	Висновок щодо адекватності

(Φ 03.02 – 03)

## АРКУШ ОБЛІКУ ЗМІН

No	№ листа (сторінки)			Підпис особи,	Дата	Дата	
зміни	Зміненого	Заміненого	Нового	Анульо- ваного	яка внесла зміну	внесення зміни	введен- ня зміни

(Φ 03.02 – 32)

## УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				