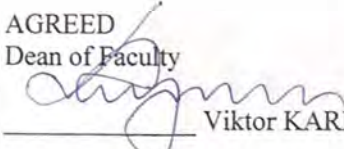


MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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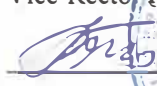
Faculty of Architecture, Civil Engineering and Design
Computer Technologies of Airport Construction and Reconstruction Department

AGREED
Dean of Faculty


Viktor KARPOV

«26» 10 2022

APPROVED
Vice Rector for Academics


Anatolii POLUKHIN

«23» 10 2022



Quality management system

COURSE TRAINING PROGRAM

on

"Construction Economics"

Educational and Professional Program: «Industrial and Civil Engineering»

Field of study: 19 «Architecture and Construction»
Specialty: 192 «Building and Civil Engineering»

Form of education	Sem	Total (hours/ ECTS credits)	Lec.	Prac.	Lab.	Self-study	Home-works control works	KW / KP	Form of control
Full-time	8	120/4,0	14	-	42	64	HW 8c	-	Graded Test 8 ^d semester
Part-time	-	-	-	-	-	-	-	-	-

Index: ECB - 5 - 192 - 2 / 22-2.1.28

QMS NAU CTP 10.01.04-01-2022



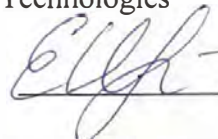
The Course Training Program on "Construction Economics" is developed on the basis of the Educational - Professional Program "Industrial and Civil Engineering", Bachelor Curriculum and Extended Curriculum № CB-5-192-2/21, № ECB-5-192 -2/22 for training higher education seekers of the Bachelor degree of speciality 192 "Building and Civil Engineering" and corresponding normative documents.

Developed by:

Associate professor of the Computer Technologies
of Airport Construction and
Reconstruction Department

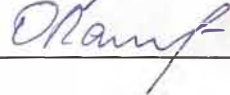
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Reconstruction Department

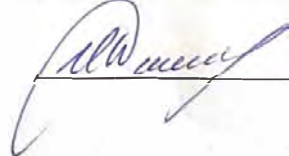
 Kateryna KRAYUSHKINA

Discussed and approved by the Graduat Department for the Specialty 192 "Building and Civil Engineering" (Educational and Professional Program "Industrial and Civil Engineering") - Computer Technologies of Airport Construction and Reconstruction Department, Minutes № 12 of "25" 10 2022.


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«27» 10 2022

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INTRODUCTION

The Course Training Program of the academic discipline "Construction Economics" was developed on the basis of the "Methodical recommendations for the development and execution of the syllabus of educational discipline of full-time and part-time forms of training", approved by the 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 educational discipline "Economics of construction of highways and airports" is the theoretical and practical basis of a set of knowledge and skills that form the profile of a specialist in the field of construction of transport infrastructure.


The purpose of teaching the discipline is for students to acquire theoretical knowledge and practical skills in solving engineering problems in the construction of highways, objects and infrastructure structures, theoretical and practical training of future specialists in the field of construction, organization of the production process, creative solution of engineering and research problems.

The tasks of studying the academic discipline are:

- formation of the conceptual apparatus of the organization of the construction process;
- acquisition of knowledge about the economic, social and mathematical foundations of solving transport problems;
- mastering construction process management methods;
- acquisition of the necessary skills of applying the acquired knowledge to solving practical tasks of the organization and performing construction works in the transport industry;
- mastering the methods of analysis and implementation in the construction of the latest achievements of NTP.

1.2. Educational outcomes of the academic discipline

As a result of the study of the discipline, the student of higher education acquires knowledge related to the organization and control of production in the process of construction and operation of highways and airfields and their infrastructure, to participate in research and development in the field of architecture and construction. Students also acquire the skills of using the principles and methods of calculating the objects of highways and airfields, infrastructure (transportation, landscaping, engineering communications, etc.). Have in-depth cognitive and practical abilities/skills, mastery and innovative solutions at the level necessary for solving complex specialized tasks in the field of construction and civil engineering.

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1.3. Competencies obtained through academic discipline

According to the content of the discipline, the student of higher education must be able to professionally apply the acquired theoretical knowledge when solving practical problems of the functioning of complex transport systems; perform collection, analysis, substantiation, assessment of the condition and construction conditions of highways and airfields of various categories and classes and their infrastructure.


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.

General competences that the academic discipline makes possible to acquire: GC2 – Knowledge and understanding of the subject area and professional activity; 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; GC8 – Ability to communicate with members of other professional groups at different levels (with experts from other fields of knowledge/types of economic activity); GC9 – Ability to realize one's rights and responsibilities as a member of society; awareness of the value of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine; GC10 – Ability to save and multiply 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 and technology, use different types and forms of physical training for active leisure and leading a healthy lifestyle.

Professional competences that the educational discipline gives the opportunity to acquire: 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; 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.

1.4. Interdisciplinary links

This discipline is based on the knowledge of such disciplines as "Urban Planning and Transport", "Building Constructions", "Erection and Assembling of Structures" and is the basis for performance of qualification paper.

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2. PROGRAM OF ACADEMIC DISCIPLINE

2.1. Content of the academic discipline

The educational material of the discipline is structured according to the modular principle and consists of two educational modules, namely:

- of educational **module No. 1 "Pricing of construction products, investor estimate documentation"**
- of educational **module №2 «The economic efficiency of capital investments, the option of construction and the payback period of capital investments»**,

each of which is a logically complete, relatively independent, integral part of the educational discipline, the mastery of which involves conducting modular control work and analyzing the results of its implementation.

2.2. Module structure and integrated requirements for each module

Module №1 «Pricing for construction products, investor estimate documentation»

Integrated module requirements №1:


To know: factors that influence the patterns of price formation for construction products; peculiarities of determining direct and general production costs for certain types or groups of works; basic principles and methods of design, construction and operation of roads, taking into account the effective use of capital investments; methods of improving the operation of means of management and regulation of the construction process; methods of assessing the efficiency of capital investments in relation to the organization of the construction process.

Be able to: prepare estimate documentation; to analyze and evaluate the cost indicators of local, object and consolidated estimates, and to determine ways to eliminate deficiencies; evaluate the negative factors that affect the cost of the scope of work performed; to carry out work on the completion of the organization of the construction process; formulate proposals for improving the regulatory framework for the performance of works in the transport industry.

Module №2 «Pricing for construction products, investor estimate documentation»

Topic 1. Economics of construction. Introduction. The purpose and tasks of the educational course, its importance and connection with other disciplines and branches of the national economy. Macroeconomics. Microeconomics. Features of the construction industry. Structural blocks of construction. Information is the basis of management of the "Construction Economics" system and determination of cost indicators.

Topic 2. Capital construction. Double understanding of capital construction. Investor - customer, general contractor, their functions. Basic funds. Conceptual apparatus - work tools, work objects, working conditions. Socio-economic essence of

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fixed assets. Groups of fixed assets. Depreciation of fixed assets of the construction organization, depreciation.

Topic 3. Valuation of fixed assets. Balance (initial), recovery and residual value of fixed assets. Linear depreciation. Degressive method of transferring the cost of production assets to finished products.

Topic 4. Physical and moral wear and tear of production funds. Signs of physical wear and tear of work equipment and their reassessment. Forms of moral wear and tear of the main productive funds. The dependence of the moral wear and tear on the means of labor on the achievements of scientific and technical progress. Average annual and basic estimates of the input - disposal of productive funds.

Topic 5. Efficiency of the main production assets. Fund return. Groups of use of the main production assets. General - value indicators. Private (mainly natural) indicators. Total profitability. Estimated profitability. The coefficient of elimination of OVF.

Topic 6. Estimated cost and estimated cost of construction and assembly works. Composition of the estimated cost. Direct costs. The structure of direct costs. Information support for determining value indicators in direct costs. Calculation of the wages of workers = construction workers on the basis of regulatory and estimated costs and regulatory classification of works. Determining the costs of operating construction machines and mechanisms and the deadline for completing a given amount of work.


Topic 7. General production costs (ZVV). Composition and main characteristics of general production costs. Justification of the importance of determining costs in the ZVV. The method of determining labor costs and wages in ZVV. Deductions for social events. Other operating expenses.

Topic 8. Pricing in market conditions for construction products. Composition of investor estimate documentation. Information support for the preparation of investor estimate documentation. Elementary estimated and aggregated regulations. Resource element norms for construction works (RESN). Resource element norms for the operation of construction machines (REKNEM). Consolidated regulations.

Topic 9. Compilation of local estimates and local estimated ro-calculations. The substantive part of the estimates. Components of the code of estimates. Normative indicators of their value. Estimated indicators and methods of their determination. Peculiarities of calculating estimates for individual types and groups of performed works.

Topic 10. Compilation of object estimates and object estimate ro-calculations. Substantive part and calculated indicators of estimates. Methodology for calculating the cost of unit work. Determination of the specific weight of labor intensity and its value.

Topic 11. Preparation of estimates for certain types of expenses. Types of expenses are not provided for in local estimates. Content part and calculated indicators. Determining costs for the acquisition of resources, technical equipment and its operation.

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Topic 12. Summary estimates of the cost of construction. The structure of the summary estimate. Content and calculated indicators of the estimate. Methodology for calculating the total cost of performed works for each chapter and cost distribution by types of works.

Topic 13. Calculation of estimated profit, risk of construction participants, administrative and inflationary costs. Determination of the coefficient of pitot-my weight of labor intensity. Calculation of the wage fund. Determination of labor costs for construction and installation works. Methodology for calculating profit and other costs by their percentage values. Total cost of construction. Модуль №2 «Економічна ефективність капітальних вкладень, варіантність будівництва та термін окупності капітальних вкладень»

Integrated module requirements №2:

Know: features of financing construction objects; economic content of one-time capital investments in the construction object; essence of current costs; the method of bringing capital investments to the base in order to compare costs; the sequence of determining the efficiency ratio of capital investments and the payback period; method of comparing construction options; peculiarities of determining the profitability and profitability of the construction organization.

Be able to: make decisions regarding the optimal distribution of capital investments according to the terms of execution of construction works; perform a comparison of construction options and determine the optimal one; determine the efficiency ratio of capital investments; to bring various one-time and current costs to one basis; carry out an assessment of the main production assets of the organization for the development and implementation of a system of measures aimed at increasing the efficiency of production processes.


Topic 1. Economic model of making a profit of a construction organization. Determination of gross profit. Calculation of gross costs. Mandatory and additional payments and other costs. Obtaining a net net profit.

Topic 2. Production and economic model of enterprise (organization). Functional structure of the model. Resource provision of the production activity of the organization. Production activity. The results of activities are the productivity of the organization. Determination of productivity of individual resources. Profitability of the organization.

Topic 3. Financial and economic model (balance sheet) of the enterprise (organization). Enterprise (organization) capital. Fixed capital of the enterprise (organization). Working capital. Intangible assets. Material stocks. Investment sources of capital formation. Long-term and short-term loans.

Topic 4. Model of financial activity of the enterprise (organization). Scheme of financial activity of the enterprise. Cash flow. Cash inflows. Income from the sale of products. Income from investment activities. Costs are related to the production and sale of products. Payments for financial operations.

Topic 5. Comparative economic efficiency of capital investments. Alternative approach. Limits of comparison. Technical parameters of options. Average technical

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speeds. The weighted average value of the technical speed for the options. Techno-economic justification of options in reconstruction projects.

Topic 6. Indicators of one-time and current expenses. Indicators of one-time costs. Costs for capital repairs of the object in the share related to the increase in its inventory value. Additional annual capital investments in the construction industry. .Determining individual indicators of current costs. Current expenses related to the movement of goods and passengers.

Topic 7. Effectiveness of construction options for objects of various purposes. The sequence of calculations. Coefficient of annual growth of current and one-time expenses. Average standards of work performance costs by options, taking into account the characteristics of the work performed. Expenses are attributed to the increase in inventory value. Bringing costs to the base year. Economic comparison of construction options.

Topic 8. Transport costs. Prerequisites for determining transport costs. Determination of savings in transport costs. Technical and economic indicators of the project. General effect. Net balance (gross) profit. Coefficients of current (discounted) value. Payback period. Efficiency of capital investments.



2.3. Thematic plan

№	Topic	Academic hours								
		Full-time education				Part-time study				
		Total	Lecture	ab. classe	Self-study	Total	Lecture	Lab. clas	Self-study	
1	2	3	4	5	6	7	8	9	10	
Module № 1 "Pricing of construction products, investor estimate documentation"										
1.1	Economics of construction.	8 semester				9 semester				
		6	2	2	2	-	-	-	-	
1.2	Capital construction.	4	-	2	2	-	-	-	-	
1.3	Assessment of fixed assets .	4	-	2	2	-	-	-	-	
1.4	Physical and moral wear and tear of production assets	4	-	2	2	-	-	-	-	
1.5	Efficiency of the main productive assets.	4	-	2	2	-	-	-	-	
1.6	Estimated cost and estimated cost of construction and assembly works.	6	2	2	2	-	-	-	-	
1.7	General production costs (ZVV).	4	-	2	2	-	-	-	-	
1.8	Pricing in market conditions for construction products.	6	2	2	2	-	-	-	-	
1.9	Preparation of local estimates and local cost calculations .	4	-	2	2	-	-	-	-	
1.10	Compilation of object estimates and object cost calculations .	4	-	2	2	-	-	-	-	
1.11	Preparation of estimates for individual types of expenses.	4	-	2	2	-	-	-	-	
1.12	Estimated calculations of the cost of construction have been compiled.	4	-	2	2	-	-	-	-	
1.13	Calculation of estimated profit, risk of construction participants, administrative and inflationary costs.	4	-	2	2	-	-	-	-	
1.14	Modular test №1	6	1	2	2	-	-	-	-	
1.15	Homework	-	-	-	8	-	-	-	-	
Total for Module №1		71	7	28	36	-	-	-	-	
Module №2 « Economic efficiency of capital investments, the option of construction and the payback period of capital investments »										
2.1	Economic model of obtaining profit of the construction organization.	8 semester				9 semester				
		7	2	2	3	-	-	-	-	
2.2	Production and economic model of enterprise (organization).	5	-	2	3	-	-	-	-	
2.3	Financial and economic model (balance sheet) of an enterprise (organization).	5	-	2	3	-	-	-	-	
2.4	Model of financial activity of the enterprise (organization).	3	-	-	3	-	-	-	-	
2.5	Comparative economic efficiency of capital investments.	5	2	-	3	-	-	-	-	



2.6	Indicators of one-time and current costs .	5	-	2	3	-	-	-	-
2.7	The effectiveness of options for construction of objects of various purposes	7	2	2	3	-	-	-	-
2.8	Transportation costs.	5	-	2	3	-	-	-	-
2.9	Module Test №2	7	1	2	4	-	-	-	-
2.10	Control (home) work (ZFN)	-	-	-	-	-	-	-	-
2.11	Final semester test (ZF N)	-	-	-	-	-	-	-	-
Total for Module №2		49	7	14	28	-	-	-	-
Total For Academic Discipline		120	14	42	64	120	-	-	-

2.4. Tasks for homework and control (home) work

The purpose of performing control (homework) work is to teach students to work independently with educational, reference, scientific and regulatory literature in order to analyze and justify the financial state, technical and operational characteristics of the main production assets of the construction organization, the features of compiling estimate documentation and distribution of capital investments.

For ZFN students, tasks to be performed are developed by the author of the work program. Study materials are approved by the minutes of the meeting of the graduate department, brought to the attention of the student individually and carried out in accordance with methodical recommendations.

2.5. List of questions for preparing for the final test

The list of questions and the content of tasks for preparation for the final test are developed by the leading teacher of the department in accordance with the work program, approved at the meeting of the department and brought to the attention of students.

3. TRAINING MATERIALS FOR THE DISCIPLINE

3.1 Teaching methods

The following learning methods are used when studying an academic discipline:


- explanatory and illustrative method;
- the problem statement method;
- reproductive method.

The implementation of these methods is carried out during lectures, demonstrations, independent problem solving, and work with educational literature.

3.2. Recommended literature

Basic literature

3.2.1. Іванов С. В. Статистика як чинник оцінки кон'юнктури будівельно-го ринку: монографія; НАН України, Ін-т економіки пром-сті. Київ, 2021. 164 с.

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3.2.2. Економіка підприємства : підручник / під заг. ред. д.е.н., проф. Ковальської Л.Л. та проф. Кривов'язюка І.В. Київ : Видавничий дім «Кондор», 2020. 700 с

3.2.3. Методичні рекомендації щодо визначення загальної соціально-економічної ефективності фінансування робіт з нового будівництва, реконструкції та ремонтів автомобільних доріг загального користування. – К.:ДП «ДерждорНДІ» імені М.П. Шульгіна» . 2020.

3.2.4. Економіка будівельного підприємства : підручник / авт. кол.: Т.О. Окландер, І.А. Педько, О.Л. Камбур [та ін.]. – К. : Центр учбової літератури, 2018. – 363 с.

3.2.5. Н. В. Бахур ВПЛИВ БУДІВЕЛЬНОЇ СФЕРИ УКРАЇНИ НА РЕГІОНАЛЬНИЙ РОЗВИТОК У ВОЄННИЙ ЧАС Електронний журнал «Ефектив-на економіка» (Категорія «Б», Наказ Міністерства освіти і науки України від 11.07.2019 № 975)

3.2.6. Гнатченко Є. Ю. Економіка будівництва : конспект лекцій для студентів денної і заочної форм навчання освітнього рівня «бакалавр» за спеціальністю 192 – Будівництво та цивільна інженерія / Є. Ю. Гнатченко ; Харків. нац. ун-т міськ. госп-ва ім. О. М. Бекетова.–Харків: ХНУМГ ім. О. М. Бекетова, 2018.– 62 с.

Additional literature

3.2.7. Рогожин П.С., Гойко А.Ф. Економіка будівельних організацій. - К.: Видавничий дім «Скарби», 2011.- 448 с.

3.2.8. Тугай А.М., Шилов Е.Й., Гойко А.Ф. Економіка будівельної організації: курс лекцій. – К.: Міленіум, 2002. – 224 с.

3.2.9. Шилов Е.Й., Гойко А.Ф., Измайлова К.В., Закорко П.П., Гриценко О.С. Складання кошторисної документації за допомогою укрупнених показ-ників. Навчальний посібник. - К.: КНУБА, 2003. – 138 с.

3.3. Internet information resources

3.3.1 <https://www.impuls-ivc.ua/ekonom%D1%96ka-bud%D1%96vnictva> Економіка будівництва

3.3.2 <https://kvpubd.kiev.ua/wp-content/uploads/2020/09/grishhenko-%D1%94.k.-osnovi-galuzevo%D1%97-ekonomiki-ta-pidpri%D1%94mnicztva.-urok-3-4.pdf> . Основи галузевої економіки та підприємництва.

3.3.3.https://pidruchniki.com/80400/ekonomika/otsinka_ekonomichnoyi_efektivnosti_kapitalnih_vkladen Оцінка економічної ефективності капітальних вкладень.

4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSMENT

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

Table 4.1

View educational work	Max scores		View educational work	Max scores	
	Full-time education	Part-time education		Full-time education	Part-time education
8 semester			8 semester		
Module № 1 «Pricing for construction products, investor estimate documentation»			Module № 2 «Economic efficiency of capital investments, the option of construction and the payback period of capital investments»		
Kind of Academic Activities	values	values	Kind of Academic Activities	values	values
Laboratory classes 13	13x3=39	-	Laboratory classes 6	6x3=18	-
Homework	19	-	Homework	-	-
<i>For carrying out a module test a student must receive not less than</i>	24	-	<i>For carrying out a module test a student must receive not less than</i>	11	-
Carrying out a module test №1	12	-	Carrying out a module test №2	12	-
	-	-	Final semester test	-	-
Total for module 1	70	-	Total for module 2	30	-
Total for module 1, 2				100	-
Total for academic discipline				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 Graded Test 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 in points, the National Scale and the ECTS Scale is written into a student's record book, for example: 92/Ex/A, 87/Good/B, 79/Good/C, 68/Sat/D, 65/Sat./E, etc.

4.6. 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.



(Ф 03.02 – 01)

АРКУШ ПОШИРЕННЯ ДОКУМЕНТА

№ при м.	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 ознайомлення	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	Анульованого			

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				
Узгоджено				



**Syllabus of the academic discipline
"CONSTRUCTION ECONOMICS"
Educational and professional program:
«Industrial and Civil Engineering»,
Field of study: 19 «Architecture and Construction»
Specialty: 192 «Building and Civil Engineering»**

Level of higher education	First (undergraduate)
Discipline status	Educational discipline of the selective component of OP
Course	4
Semester	8
Scope of discipline, ECTS credits/hours	4,0/ 120
Language of training	Ukraine
What will be studied (subject of study)	Capital construction as a branch of the national economy; basic economic models; efficiency of production funds; composition of investor estimate documentation; distribution of capital investments by construction terms; determination of the indicators of the estimate documentation; bringing various one-time costs to a common basis; determining the effectiveness of capital investments; solving practical tasks of the organization and management of the construction process.
Why it is interesting/should be studied (purpose)	The purpose of teaching the discipline is for students to acquire theoretical knowledge and practical skills in solving production and organizational issues of the construction organization; theoretical and practical training of future specialists in the field of construction, organization of the construction process, creative solution of engineering and research tasks.
Why you can learn (learning outcomes)	The student of higher education acquires knowledge about work on supervision and control of production in the process of construction and operation of construction objects, participates in research and development in the field of architecture and construction, methods of calculating the cost of objects, infrastructure (transportation, landscaping - swarm of territories, engineering communications, etc.). Have in-depth cognitive and practical skills/skills, mastery and innovation at the level necessary for solving complex specialized tasks in the field of construction and civil engineering
How to use acquired knowledge and skills (competencies)	General competences that the academic discipline makes possible to acquire: GC2 – Knowledge and understanding of the subject area and professional activity; 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; GC8 – Ability to communicate with members of other professional groups at different levels (with experts from other fields of knowledge/types of economic activity); GC9 – Ability to realize one's rights and responsibilities as a member of society; awareness of the value of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine; GC10 – Ability to save and multiply 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 and technology, use different types and forms of physical training for active leisure and leading a healthy lifestyle. Professional competences that the educational discipline gives the opportunity to acquire: 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; 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.
Educational logistics	Content of the discipline: . Construction economics. Introduction. The purpose and tasks of the educational

course, its meaning and connection with other disciplines and branches of the national economy. Macroeconomics. Microeconomics. Features of the construction industry. Structural blocks of construction. Information is the basis of management of the "Construction Economics" system and determination of cost indicators.

Capital construction. Double understanding of capital construction. Investor - customer, general contractor, their functions. Basic funds. Conceptual apparatus - work tools, work objects, working conditions. Socio-economic essence of fixed assets. Groups of fixed assets. Depreciation of fixed assets of the construction organization, depreciation.

Assessment of fixed assets. Balance (initial), recovery and residual value of fixed assets. Linear depreciation. Degressive method of transferring the cost of production assets to finished products.

Physical and moral wear and tear of production assets. Signs of physical wear and tear of work equipment and their reassessment. Forms of moral wear and tear of the main productive funds. The dependence of the moral wear and tear on the means of labor on the achievements of scientific and technical progress. Average annual and base estimates of input - disposal of productive assets.

Efficiency of the main productive assets. Fund return. Groups of use of the main production funds. General - value indicators. Private (mainly natural) indicators. Total profitability. Estimated profitability. The coefficient of elimination of OVF.

Estimated cost and estimated cost of construction and assembly work. Composition of the estimated cost. Direct costs. The structure of direct costs. Information support for determining value indicators in direct costs. Calculation of wages for workers = builders based on regulatory and estimated costs and regulatory classification of works. Determining the costs of operating construction machines and mechanisms and the deadline for completing a given amount of work.

General production costs (ZVV). The composition and main characteristics of general production costs. Justification of the importance of determining costs in the ZVV. The method of determining labor costs and wages in ZVV. Deductions for social events. Other operating expenses.

Pricing in market conditions for construction products. Composition of investor estimate documentation. Information support for the preparation of investor estimate documentation. Elementary estimated and aggregated regulations. Resource element norms for construction works (RESN). Resource element norms for the operation of construction machines (REKNEM). Consolidated regulations.

Preparation of local estimates and local estimate calculations. The substantive part of the estimates. Components of the code of estimates. Normative predicates of their meaning. Estimated indicators and methods of their determination. Peculiarities of calculating estimates for individual types and groups of performed works.

Compilation of object estimates and object estimate calculations. Substantive part and calculated indicators of estimates. Methodology for calculating the cost of unit work. Determination of the specific weight of labor intensity and its value.

Preparation of estimates for certain types of expenses. Types of expenses are not provided for in local estimates. Content and calculated indicators. Determining the costs of purchasing resources, technical equipment and its operation.



Estimated estimates of the cost of construction have been compiled. The structure of the summary estimate. Methodology for calculating the total cost of performed works for each chapter and cost distribution by types of works.

Calculation of estimated profit, risk of construction participants, administrative and inflationary costs. Determination of the coefficient of specific weight of the work-capacity. Calculation of the wage fund. Determination of labor costs for construction and installation works. Methodology for calculating profit and other costs by their percentage values. Total cost of construction.

The economic model of making a profit of a construction organization. Determination of gross profit. Calculation of gross costs. Mandatory and additional payments and other costs. Obtaining a net net profit.

Production and economic model of enterprise (organization). Functional structure of the model. Resource provision of production activities of the organization. Production activity. The results of activities are the productivity of the organization. Determination of productivity of individual resources. Profitability of the organization.

Financial and economic model (balance sheet) of the enterprise (organization). Enterprise (organization) capital. Fixed capital of the enterprise (organization). Working capital. Intangible assets. Material stocks. Investment sources of capital

	<p>formation. Long-term and short-term loans.</p> <p>Model of financial activity of the enterprise (organization). Scheme of financial activity of the enterprise. Cash flow. Cash inflows. Income from the sale of products. Income from investment activities. Costs are related to the production and sale of products. Payments for financial transactions.</p> <p>Comparative economic effects</p>
Prerequisites	"Construction organization", "Construction technology", "Construction economics"
Porekvizyty	"Economics of industry", "Fundamentals of operation of roads and airfields", qualification work.
Information support from the repository and fund of NTL NAU	<p>Rogozhyn P.S., Goyko A.F. Economics of construction organizations. - K.: "Treasures" Publishing House, 2011. - 448 p.</p> <p>Tugai A.M., Shilov E.Y., Goyko A.F. Economics of construction organization: a course of lectures. - K.: Millennium, 2002. - 224 p.</p> <p>The practice of forming relationships in construction under the conditions of a one-level pricing system: Collection of official normative documents (Compiled by A.V. Berkuta, P.I. Guben, V.G. Ivankina, T.O. Sharapova. - K.: NVF " Inproekt", 2002. - 320 p.</p> <p>Methodological recommendations for determining the overall socio-economic efficiency of financing works on new construction, reconstruction and repair of objects and structures. - K.: SE "DerzhdorNDI" named after M.P. Shu-lygin". 2020.</p> <p>DBN D.2.2-27-2020. Motor roads: Coll. 27. – K.: State Committee for Construction, Architecture and Housing Policy of Ukraine, 2019.</p> <p>Kyzima S.S. Operation of highways: education. manual for students higher education faculty studying in the field of preparation. "Construction" / - K.: NTU, 2009. - 272 p.</p>
Location and logistics	http://www.lib.nau.edu.ua
Semester control, examination methods	Modular control works, credit
Department	Computer Technologies of Airport Construction and Reconstruction
Faculty	Architecture, construction and design
Profesors	 <p>STEPURA VIKTOR Position: Associate Professor Scientific degree: Candidates of Sciences Academic title: Associate Professor Profile: http://iap.nau.edu.ua/index.php/prepod-ktb Phone: 044-406-72-89 E-mail: oksana.chernyshova@npp.nau.edu.ua Room: 5.307</p>
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Originality of the academic discipline	Authors course
Link to discipline	https://er.nau.edu.ua/handle/NAU/52447/