Ministry of Education and Science of Ukraine

ODESA STATE ACADEMY OF CIVIL ENGINEERING AND ARCHITECTURE

Engineering Building Institute
Department of Technology of Building Industry

SYLLABUS
of academic discipline

INNOVATIONS IN CONSTRUCTION

Educational level	second (master's)	
Training program	selective	
Branch of knowledge	19	Architecture and construction
Specialty	192	Construction and civil engineering
Educational program	Industrial and civil construction	
Scope of the discipline	**1.5 ECTS credits** (45 academic hours)	
Types of classroom classes	lectures, practical classes, own work	
Individual and (or) group tasks	calculation-graphic work	
Forms of semester control	test	

Teachers:

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In the process of studying this discipline, students will **FAMILIARIZE WITH INNOVATIVE TECHNOLOGIES USED IN MODERN CONSTRUCTION PRACTICE**.

For example: The ability to correctly choose the most effective constructive and technological solution and rational technology using modern and advanced experience in the field of scientific research in our country and abroad, to plan the schedule and sequence of construction works.

Prerequisites for studying the discipline are the acquisition of theoretical knowledge and practical skills in the following disciplines:

- Life Safety;

- Materials Science;
- Structures of Buildings and Structures;
- Architectural Design.

The purpose of discipline is the formation of future specialists of the main **professional competencies:**

- the ability to apply knowledge that will help in practical activities with the solution of issues of choice and application of innovative technologies in construction.

Program learning outcomes:

know:

- innovative technologies for the construction of underground structures;
- methods of building energy-efficient buildings;
- basics of innovative technologies of insulation work;
- the basics of innovations in the arrangement of translucent structures;
- basics of using multi-criteria analysis when choosing innovations.

be able:

- make a rational choice from modern technologies and materials used in the construction of buildings and structures;
- to make effective decisions to solve professional problems in the production of insulation works.
- using the main provisions of innovations to carry out a selection of materials and technologies for their introduction into technological maps.

THEMATIC PLAN

No	Name of topics	Number of hours			
		lectures	practical	laboratory	independent
PART I					
1.1	Construction of underground engineering structures	2	0.5		8
1.2	Insulation works (thermal insulation)	4	2		12
1.3	Insulation works (sound insulation)	4	2		12
1.4	Insulation works (waterproofing)	4	2		12
1.5	Insulation works (anti-corrosion protection)	2	0.5		8
1.6	Arrangement of translucent structures	2	1		12
1.7	Rapidly assembled buildings. Technology of building energy-efficient houses	4	1		8
1.8	Selection of innovations in construction based on multi-criteria analysis	2	7		8
	In total	**24**	**16**	**-**	**80**

Calculation and graphic work is provided on the topic "Innovations in construction".

This work examines various structural and technological solutions for insulation work, technologies for erecting quick-mount buildings and technologies for erecting energy-efficient buildings.

The student needs to: using the method of multi-criteria analysis, choose and substantiate the most rational constructive-technological or technological solution from the works considered above.

The work consists of one part: calculations and graphing, and is performed in the form of an explanatory note (A-4 format).

Methodological recommendations for the performance of control work [3].

Evaluation criteria and diagnostic tools

The minimum assessment level for obtaining a "credit" in the academic discipline "Innovations in construction" is 60 points and can be achieved by the following means of assessment:

Evaluation tools		Minimal scores	Maximum scores
type of control	Quantity per semester		
PART I			
Control work	1	15	20
Thematic survey	1	15	20
Active participation in practical classes	8		20
Knowledge control:			
- Current knowledge control (standardized tests), or	2	30	40
- Final (semester) knowledge control	1		
Together		**60**	**100**

Information support

Basic literature

1. Meneilyuk O.I. Materials and technologies of insulation works in construction / O.I. Meneilyuk, I.M. Babii, G.D. Bochorishvili, K.I. Bochevar // Monograph. M 34. Odesa: Publishing House of FOP Bondarenko M.O., 2020. – 492 p.: ill.

2. An extended plan of lectures on the discipline: "Innovations in construction" for students of the "master's" education level, specialty 192 "Construction and civil engineering", specialization "Industrial and civil construction", full-time and part-time forms of education. Babii I.M. Odesa: ODABA publishing house, 2020-32 p.

3. Methodical guidelines for the discipline: "Innovations in construction" for the performance of control work for students of the "master's" level of education, specialty 192 "Construction and civil engineering", specialization "Industrial and civil construction" and ODABA master's degree holders. Meneilyuk O.I., Nikiforov O.L. Odesa: ODABA publishing house, 2018-54 p.

4. Methodological instructions for practical classes and independent work in the discipline: "Innovations in construction" for students of the "master's" level of education, specialty 192 "Construction and civil engineering", specialization "Industrial and civil construction" and holders of the

master's degree of ODABA. Meneilyuk O.I., Babii I.M., Nikiforov O.L. Odesa: ODABA publishing house, 2020-47 p.

5. List of regulatory documents in the field of construction. Kyiv, 2018.

6. Zodchiy information reference system.

7. Study guide "Modern roof construction technologies". L.E. Lukashenko, A.I. Meneilyuk, E.Y. Kozlyuk, V.Y. Moskalenko, A.F. Petrovskyi. Kharkiv: Eden,2006.

8. Educational manual "Modern technologies of floor construction and repair". Meneilyuk A.I., Lukashenko L.E. OGASA, Odessa, 2007.

9. Study guide "Modern facade systems". A.I. Meneilyuk, L.E. Lukashenko, V.S. Dorofeev, etc. Kyiv: Osvyta Ukrainy, 2008.

Auxiliary sources of information

1. Technical regulation in the countries of the European Union. Article by Yu. A. Matrosova, website: http://okna.ua/library.

2. The path to the European Union market is not easy. V. Sydenko, A. Baranovsky (Razumkov Center). Internet site: http://www.zn.ua.

3. Technological resources of the state. International Scientific and Technical Communications. Website:http://books.efaculty.kiev.ua.