

NATIONAL TECHNICAL UNIVERSITY OF UKRAINE  
"Igor Sikorsky Kyiv Polytechnic Institute"



**Approve**

Chairman of the Admissions Committee  
Rector

Anatolii MELNYCHENKO

28.03.2025

date

**PROGRAM**

**entrance exam in the specialty**

for admission to the educational and scientific program for the preparation of Doctor of Philosophy  
"Geoengineering"

***in the specialty G16 Mining and Oil and Gas Technologies***

The Program was adopted:

Scientific and Methodological Commission in the  
specialty G16 Mining and Oil and Gas Technologies  
Protocol No. 3 dated March 26, 2025

Head of the NMCU

Natalia ZUIEVSKA

## ENTRY

The program of the entrance exam determines the form of organization, content and features of the entrance exam in the specialty to the educational and scientific program for the training of doctors of philosophy "Geoengineering" in the specialty G16 Mining and Oil and Gas Technologies

**The purpose of the program** is to check the acquisition of competencies and learning outcomes by the entrant, which are determined by the draft standard of higher education in the specialty 184 Mining for the second (master's) level of higher education.

### 1. BASIC SUMMARY

#### 1.1. List of sections and topics that are submitted for the exam in the specialty

##### 1. Fundamentals of economics, technology and mechanization of mining operations

Economic, planning, organizational and managerial activities up to the level of the enterprise using modern economic methods of management, organization of production and labor, state accounting; cooperative and lease relations in economic activities based on the state plan for the development of the national economy, taking into account the program and problems of mining production development in the country.

The main tasks of the mining industry, classification of mining industries. Economic assessment of mineral deposits. Production capacities and products of the mining industry. Brief technical and economic characteristics of the main mining and extracting basins of the country. Definition of economic system. Materiality of economic indicators. Schematic diagram of the formation of economic indicators in the national economy. Mathematical description of the relationships of economic indicators in the mining industry.

Mining Resources. Fixed assets. Reciprocal means. Personnel of the mining industry.

Cost and pricing in the mining industry. Profitability of the mining industry. Profit. Economic Stimulus Funds. Finance and Credits in the Mining Industry.

Concentration, specialization, cooperation and combination of production. Principles of industrial location.

Production balances and their optimization. Production program of the production association, career.

Efficiency of scientific and technological progress in the mining industry. Historical background on the development of mining technologies. Tasks facing mining science and practice. Mining technologies of tomorrow.

##### 2. Open method of field development

The concept of open pit mining. The main elements of the quarry. The main parameters of the quarry. Stages of open pit mining. Types of deposits being developed. Types of open pit mining. Types of open pit mining. Dimensions of quarry fields. Use of subsoil and nature protection. Periods of mining operations. Preparation of the quarry field for development. Production processes, methods and means of their mechanization. The procedure for extracting ledge rocks. Stability of the sides and ledges of the quarry. General information about the design of the sides of quarries. The main indicators of the efficiency of the quarry. Basics of safety of open pit mines. General information about the technical and economic indicators of open pit mining.

Rocks as an object of development. Methods of preparing rocks for extraction. Technological requirements for preparation before the explosion. Blasting methods. Drilling processes of blast wells and holes. Drillability of rocks. Types of drilling. Technology, mode and speed of percussion, screw cone, pneumatic hammer and thermal drilling. Grinding oversized. Organization of drilling operations. Operational productivity of drilling rigs. Technological conditions of blasting. Technological characteristics of BP. Reference, design and actual specific consumption of BP.

Parameters of blast wells. Technological foundations of the design of BP charges. Location of wells on the ledge. The order of detonation of explosive charges: instantaneous, short-decelerating. Blasting schemes. Calculation of charges. Camber characteristics. Secondary detonation. Mechanization of charging and plugging wells. Basics of safe blasting. Design and planning of drilling and blasting operations.

Types of potholes. The procedure for removing ledge rocks. Extraction of rocks with scrapers. Technological parameters of the wheel scraper. Parameters of scraper faces. Scraper performance.

The process of extracting rocks with bulldozers. Technological parameters of bulldozers, their knockouts and productivity.

The process of rock extraction with a forklift and schemes of their operation. Forklift performance.

Extraction of rocks with mechanical shovels, their technological parameters. Removal of soft rocks with mechanical shovels in various types of transport. Features of excavation during trench faces. Extraction of the blasted rock mass with quarry mechanical shovels.

Extraction of rocks with draglines, their technological parameters. Dragline breakdowns. Extraction of soft and undermined rocks with loading into the vehicle and with unloading into the mined space. Dragline performance, technological foundations of automation. Technical and economic indicators.

Rock extraction with chain excavators. Technological characteristics of chain excavators. Front and end faces. Performance of chain excavators. Organization of excavator work.

Rock extraction by special auger drilling machines, borehole combines, continuous machines for extraction of blasted rock.

Main and auxiliary quarry loads. Types of quarry transport by features. Characteristics of rocks by the severity of transportation.

Rail transport. Technological assessment and characteristics of rolling stock. Technological parameters of the railway track. Track profile. Calculation of train weight. Basics of organizing train traffic. Mode of operation and technical performance. Dumping during railway transport. Technological relations of the processes of extraction and dumping. Dumping by mechanical shovels, draglines, multi-scoop excavators, bulldozers, scrapers, loaders, hydraulic dumping. Organization of unloading operations. Technological foundations of automation of transportation and unloading operations.

Track works. Parameters of track-laying works and communication with elements of the development system and equipment parameters. Moving and relaying the track. ECONOMIC indicators of track-laying works. Requirements of safety rules for railway transport, for dumps and unloading operations, for road works.

Road transport. Technological characteristics of rolling stock (dump trucks, wheeled tractors, trolley trucks, diesel trolley trucks, quarry road trains). Career paths. Throughput and carrying capacity of quarry paths and nodes. Technological foundations of automation of motor transport. Technical and economic indicators of motor transport. Safety requirements and safety rules for road transport.

Conveyor transport. Technological characteristics and parameters of conveyors. Dumping and unloading processes. Pipeline performance. Auxiliary works. Technological foundations of automation of conveyor work. Technical and economic indicators.

Combined and special modes of transport. Technical and technological conditions for the use of combined transport, technological schemes. Quarry ore passages and ore slopes, rope lifting. Cable cranes and excavators. Extraction and movement of artificial, sawstone stone, sand, etc. Extraction and transportation of precious stones.

Reclamation of disturbed lands. Technological schemes and methods of mechanization of mining reclamation.

Features of the processes of extraction of rocks for construction purposes. Characteristics of construction rocks and products from them. Processes for the extraction of crushed stone, blocks for the production of facing slabs and saw stone.

Dividing the quarry field into extraction layers, the height of the ledge, the length of the work front, the speed of progress of the work front. General concepts of development systems. Classification of development systems.

Fundamentals of complex mechanization. Technological classification of equipment complexes. Factors affecting the productivity of mining and transport machines and equipment complexes. The basics of the complete set and the relationship between the removal-loading and transport equipment, the area of use and its impact on the economic indicators of development.

The procedure for extraction and movement of overburden rocks into dumps. Basics of calculation of the overburden technological complex. Parameters of the development system. Scope and technical and economic indicators of excavator-dump technological complexes and excavation schemes. Safety rules. Transport technological complexes.

Technological complexes and excavation schemes with conveyors, rail and road transport. Mining and transport machines. Combined technological complexes. Technical and economic indicators. Fundamentals of the theory of the working process of stone-cutting machines. Fundamentals of the theory of cutting with diamond ropes. Organization of work.

### **3. Underground method of mining deposits**

Historical development of mining equipment and technologies. The concept of underground mine workings, about the opening and preparation of the mine field. Systems of disclosure of mineral deposits, classification. Methods of opening with vertical trunks, inclined trunks. Division of the mine field into floors (floors) and panels. Panel and horizontal methods of preparing the mine field. Block preparation. The connection of the methods of disclosure and preparation.

The concept of mountain pressure. Manifestation of pressure during the conduct and operation of mine workings. Types and designs of fastening of mine workings. Methods of destruction of rocks and carrying out mine workings. Processes of working. The concept of technological schemes for carrying out horizontal and inclined workings by combines and drilling and blasting. Drilling methods, location of holes in the face, order and efficiency of blasting, organization of work. Features of sinking inclined workings. The concept of vertical trunk technology.

Extraction processes, methods of coal destruction, technology of coal extraction by combines on a gentle and inclined drop. Organization of work in the bench. Features of coal extraction on steep seams. Removal of coal seams with planers. Technological schemes of the cleaning face for inclined and steep falls. Roof management in a cleaning face, methods of management. Fastening of cleaning faces, types of fasteners.

Features of occurrence, disclosure and preparation of iron ore deposits. Methods of rebounding ore, secondary grinding. Delivery and loading of ore. Mountain pressure management. Ore deposit development systems.

Underground transport processes. Tasks and structure of transport, types of main and auxiliary transport. Technological processes in the surrounding trunk yard. Composition of atmospheric and mine air. Properties and norms of methane content, types of its release into workings, the concept of gas content, categorical nature of mines. Mine dust, types and methods of dust control. Thermal regime of mines. The concept of calculating the main ventilation parameters. Methods and schemes for ventilation of dead-end workings, ventilation of mines.

### **4. Downhole geotechnology**

Features of oil and gas fields. Drilling oil and gas wells, equipment, setting the direction. Bush wells of controlled direction. Drilling technique. Oil and gas extraction technology. Preparation, transportation, storage and processing of oil and gas.

Geotechnological methods of mining. General Patterns and Physicochemical Processes of Geotechnologies. Classification of geotechnological systems of mineral extraction. Assessment of geological and mining conditions favorable for the application of mining geotechnology. Prospects for their use for the development of mineral deposits in Ukraine. Extraction of minerals by leaching.



Underground coal gasification. Shale gas and oil production. Borehole development of underwater minerals and gas hydrates.

## **5. Construction Geotechnology**

Construction of underground structures in an open way. Construction in open pits. Trench method. "Wall in the ground". Application of mobile fasteners. Shield technology for the construction of tunnels. Designs of tunneling boards, their classification. Technology of work when using semi-mechanized and mechanized shields. Structures and construction of frames (fasteners). Consolidation plugging. Organization of work with panel technology. Schematic diagram of micropanel technology. Pipeline materials and designs. Schemes of work. Experience and prospects for improving the MShT. Puncture (the essence of the method and conditions of use). Soil piercing devices. Pipeline laying technology. Punching (essence and scope of the method). Designs of punching units. Work technology. Directional drilling (the essence of the method and its development). Equipment for directional drilling of wells, work technology. Construction of tunnels by mining method with the help of UAVs. Construction in soft and fractured rocks. Construction in strong rocks. Ways to cross the zones of disturbances through the tunnel. Directions for improving the mining method. Construction of tunnels with the help of combines and tunnel boring complexes. The essence of the method and the conditions of its application. Classification of roadheaders and complexes. Work technology. Experience of world practical use. Construction of tunnels in difficult hydrogeological conditions. Method of water reduction. Construction under compressed air. Freezing soils. Tamponage method. Lowering construction. Construction of chamber-type underground structures. Features of designing the shape of the camera and choosing its mounting. Cross-sectional opening schemes. Technologies for the construction of chambers in rocky, semi-rocky and soft rocks. Fastener erection technology. Mechanization of work. Types of mine underground storage facilities and their uses. Gas and oil storage facilities of the mine type. Practical experience in the construction of mine-type storage facilities. Construction of underground storage facilities in salt deposits. Construction of storage facilities in clay massifs using camouflage explosions: the essence of the method, requirements for the engineering and geological environment, technology of drilling and blasting, fastening of the surface of the workings with sprayed concrete, examples of practical application of the method. The use of special methods in the construction of underground structures, the development of underground structures as dual-purpose objects. Monitoring and reconstruction of underground structures.

## **6. Stresses and Strains in a Rock Mass**

Rock mechanics as the mechanics of a deformed solid. Mechanical properties of rocks. External and internal forces. Normal and tangential loads. Internal forces and tension. Mechanical properties of rocks. The limit of elasticity, proportionality. Yield strength. Tensile strength. Solid Body Load Diagram. Features of rock deformation. Complete rock deformation diagram.

Displacement in the rock under load. Relative linear deformation. The distance between the points before and after the warp. Guide cosines. Equation for linear deformations. Change of angles in a solid during deformation. Shear deformation. Shear strain angles and corresponding equations.

Deformation tensor in rocks. The main elements of the strain tensor. Linear, planar and volumetric deformations. Invariants of the strain tensor. Small deformations. Displacement and deformation rate. Strain tensor in different coordinate systems.

Stress in rocks. Stress tensor. Main voltages. Voltage state invariants. Linear stress state. Flat state of voltage. Deformation energy. Kinetic energy of body particles during deformation. Deformation potential energy. Corresponding equations.

## **7. Fundamentals of Continuous Medium Mechanics and Crack Theory**

Basic equations of the mechanics of a continuous medium. The transition from voltages at a point to the distribution of voltages over the entire volume of the loaded array. Using the d'Alembert-Euler principle to describe equilibrium in rocks. Equations of dynamic and static equilibrium.

Components of the equation. Tensor notation of equilibrium equations of a continuous medium. Equation of equilibrium for the plane state of stress. Equation of the relationship between the components of the strain tensor and displacements in the array (Cauchy equation). Saint-Venant equation. Methods of the theory of elasticity. Necessary and sufficient conditions for describing the deformed state of a rock massif. Physical Theories of Geomechanics. Elastic properties of rocks. Elastic deformations. Elasticity potential. Hooke's law in tensor form (general case, anisotropic medium). Hooke's law for an isotropic medium. Formulation of problems of the theory of elasticity, schemes and methods of solution. Airy function. Biharmonic equation and its solution.

Methods of plasticity theory. Plastic deformations. Genka's equations and their analysis. Tensor recording. Formulation of problems of the theory of plasticity and schemes for their solution. The use of computers to solve the equations of the theory of plasticity.

Methods of the theory of marginal equilibrium. Equation of static equilibrium. Equation of equilibrium at limit stress, the method of V.V. Sokolovsky for solving problems within the framework of the theory of the state of the limit stress. Equations of sliding lines in a soil mass and a method for solving them.

Methods of the theory of state beyond the limit voltage. Complete rock deformation diagram. Characteristic points of the diagram. Features of the behavior of rocks in a state of extreme stress. Indicators of deformation of rocks at extreme stress.

Equations of the theory of state beyond the limit stress. A flat static problem for a mountain range in a state of out-of-limit stress. Equation of static equilibrium. Physical equations of the theory of the state of extraterrestrial stress. Formulation of problems within the framework of the theory of the state of extreme tension and methods for their solution.

Types of cracks in a mountain range. Normal separation crack model. Displacement of the banks of the crack. System of equations for a plane static problem in an isotropic array. Airy function. Biharmonic equation. Polar coordinates. System of equations in polar coordinates. Williams Decision. Displacement stress near the top of the crack. Voltage intensity coefficient. Irwin's approach. Normal separation. Flat and anti-plane shifts.

## **8. Theories of rock strength**

Phenomenological theories of rock strength. The first theory of strength (Galileo's theory). The second theory of strength (Poncelet's theory). The criterion of the greatest linear deformation. The third theory of strength (Tresca's theory). Criteria for maximum normal and tangential stresses. The fourth theory of strength (Huber-Mises-Genki theory). Energy strain theory. The energy of changing the shape of a deformed volume. Destruction condition. Criterion of the largest linear deformations.

Strength theory based on the slip pad hypothesis. Hil-Cod Theory of Strength. The main equation. Coulomb-Mohr theory of strength. Output parameters. The main equation. The Mises-Schleicher-Botkin theory of strength. Location of the shear plane in space. Equations and parameters.

Kinetic theory of destruction. Change in the energy state of a loaded rock sample over time. Sample loading time. Arrhenius-Zhurkov equation. Stress concentration on cracks. Analysis of the tensile strength of a rock for uniaxial tensile from the point of view of the kinetic theory of strength.

## **9. Stability of quarry sides**

Patterns of formation of the loaded state in the sides of the quarry. Comparison of the state of disturbed and undisturbed arrays. Change in the state of stresses during the construction of a quarry. Equation of equilibrium, Saint-Venant equation, Hooke's equation for the side of a quarry, as a plane static problem in an isotropic array. Substitution of variables and conversion of original equations. Solutions by methods of complex potentials and Airy functions. Expressions for calculating principal stresses and their analysis. Diagrams of the distribution of main stresses in the array of the quarry side. Tangential stresses in the boron quarry massif, their calculation, analysis, distribution in

space. Stability of sides and dumps of quarries. Deformations and destruction of rock massifs.

### **10. Geographic Information Technologies in Mining**

Application of geographic information systems for current and long-term design of mining enterprises. General information about information technology. Text information, calculations and business graphics. Database. Use of computer graphics. The issue of training a mining engineer, the formation of his environmental competence on the basis of geographic information technologies. Use of geographic information technologies. Processing of cartographic materials, arrays of text and numerical information. GIS technology as a way to acquire and process geographic information.

### **11. Computer-aided design systems in geoengineering**

Solutions for designing and performing analysis by the method of finite elements of deformations and stability of soil and rocks, calculation of the interaction of the structure with the soil, the influence of heat flows and groundwater. Methods for calculating the stability of slopes and slopes. Analysis of the application of engineering measures to stabilize the soil slope with a building located near its edge using the Slide software package. Calculations of slope stability. Estimation of slope stability by finite element method using calculation programs. Determination of the stress-strain state of the soil mass and the coefficient of stability margin. Assessment of slope stability and proposal of options for anti-landslide (retaining) structures.

#### **1.2. Exam procedure**

The exam is conducted in the form of a written work. Each ticket contains four theoretical questions. For the test, 25 exam tickets are provided, formed from the above list of topics.

The exam deadline is 3 academic hours (135 minutes) without a break. After writing the work, the subject commission checks it and assigns a grade according to the evaluation criteria.

The methodology of the exam is as follows. Members of the commission inform entrants about the procedure for conducting and executing papers on the entrance exam in the specialty, issue exam tickets with appropriate options and pre-printed signed letters for writing papers. In the future, in these letters, applicants write down written answers to the questions of the exam ticket and at the end indicate the date and put a personal signature.

The organizational part of the exam (explanations of the conduct, design and criteria for evaluating the exam, the issuance of tickets and letters for writing a paper) is allocated 10 minutes from the entire time of the exam, the entrant is given 30 minutes to answer each of the four questions of the exam ticket, and 5 minutes for the final part (collection of tickets and written works from entrants by members of the commission).

At the end of the stage of writing the exam, the answers are checked and evaluated by all members of the commission. Members of the subject commission make a joint decision on assigning a grade for the answer to each of the questions of the exam ticket. These grades are placed on the student's answer sheet.

Summing up the exam in the specialty is carried out by entering points in the exam sheet. The student is familiarized with the results of the exam in accordance with the rules of admission to the university.

#### **1.3. Auxiliary materials for passing the exam**

During the exam, it is forbidden to use auxiliary literature and other auxiliary materials and means.

### 1.4. Rating Evaluation System (RSO)

At the exam, students perform a written test. Each exam ticket contains four theoretical questions. All four tasks are equivalent.

Depending on the completeness and correctness of the answer to the question, the applicant receives:

23... 25	points for	91... 100 %	correct answer
20... 22	points for	81... 90 %	correct answer
17... 19	points for	71... 80 %	correct answer
14... 16	points for	61... 70 %	correct answer
11... 13	points for	51... 60 %	correct answer
9... 10	points for	41... 50 %	correct answer
7... 8	points for	31... 40 %	correct answer
5... 6	points for	21... 30 %	correct answer
3... 4	points for	11... 20 %	correct answer
1... 2	points for	5... 10 %	correct answer
0	points for	0... 5 %	correct answer

The correct answer in this context is considered to be a complete and adequate coverage of the issue in accordance with the Exam Program in the specialty.

In the answers to the theoretical tasks of the exam ticket, the following are assessed:

- completeness of the disclosure of the issue;
- the ability to clearly formulate definitions of concepts/terms and explain them;
- the ability to argue the answer;
- analytical reasoning, comparison, formulation of conclusions;
- accuracy of the design of the written work.

The overall score for the exam is calculated as the arithmetic sum of the points for all four answers to the exam ticket questions. Thus, according to the rating system of assessment, according to the results of the exam, the applicant can score from 0 to 100 points.

In order to calculate the competitive score of the entrant, the result of the exam in the specialty is recalculated from a scale from 0 to 100 points to the scale determined by the Procedure for admission to study for higher education (100... 200 points) according to the Correspondence Table:

**Table of correspondence of RSS scores (60...100 points)**

**200-point scale scores (100...200 points)**

Scale RSS	Scale 100...200	Scale RSS	Scale 100...200	Scale RSS	Scale 100...200	Scale RSS	Scale 100...200
60	100	70	140	80	160	90	180
61	105	71	142	81	162	91	182
62	110	72	144	82	164	92	184
63	115	73	146	83	166	93	186
64	120	74	148	84	168	94	188
65	125	75	150	85	170	95	190
66	128	76	152	86	172	96	192
67	131	77	154	87	174	97	194
68	134	78	156	88	176	98	196
69	137	79	158	89	178	99	198
						100	200



Entrants, whose exam results on the RSO scale range from 0 to 59 points, receive a grade of "unsatisfactory" and are not allowed to participate in the next entrance tests (if any) and in the competitive selection.

### 1.5. Example of a typical exam task in the specialty

NATIONAL TECHNICAL UNIVERSITY OF UKRAINE  
"IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"

Educational degree	Doctor of Philosophy
Speciality	G16 Mining & Oil & Gas Technology
Educational program	Geoengineering
Exam	Entrance exam in the specialty

**EXAM TICKET No. 1**

1. Phenomenological theories of rock strength.
2. Granulometry of geomaterials.
3. Basic equations of mechanics of a continuous medium
4. Deformation tensor in rocks. The main elements of the strain tensor. Linear, plane and volumetric deformations.

Approved at the meeting of the NMCU  
Minutes No. 3 dated March 26, 2025

Guarantor of the educational program

Oksana VOVK

## 2. FINAL PROVISIONS

1. Persons who, without valid reasons, did not appear for the entrance exams at the time specified in the schedule, persons whose knowledge was assessed by scores below the established level, shall not be allowed to participate in the next entrance exams and in the competitive selection.
2. Retaking entrance tests is not allowed.

### LIST OF RECOMMENDED LITERATURE

1. Gaiko G.I., Biletskyi V.S. History of Mining: Textbook. – Kyiv: Kyiv-Mohyla Academy Publishing House, 2013. – 566 p. (in Russian).
2. Biletskyi V.S., Gaiko G.I., Orlovskyi V.M. History and Prospects of Oil and Gas Production: Textbook. – Kyiv: FOP Khalikov R.Kh., 2019. – 302 p. (in Russian).
3. Rudko G.I. Geology with the Basics of Geomorphology: Textbook. – Chernivtsi: Bukrek, 2010. – 400 p. (in Russian).
4. Tabachenko M.M. Physico-chemical geotechnology: Textbook. – Dnipropetrovsk: NSU, 2012. – 310 p. (in Russian).

5. Gan A.L., Kyrychenko M.T., Stolpnyk S.M., Zagoruyko E.A., Shaydetska L.V. Underground mining works. Technology of mining works. [Electronic resource] /manual/ Igor Sikorsky Kyiv Polytechnic Institute. – Kyiv, 2018. – 160 p.  
<http://ela.kpi.ua/handle/123456789/22726>
6. Design of stoneworking enterprises. Part II: Teaching. manual / S.S. Iskov, V.V. Korobiychuk, V.G. Kravets, R.V. Sobolevsky, A.O. Kryvoruchko, O.M. Tolkach. – Zhytomyr: ZhTU, 2018. – 248 p. (in Russian).  
Url: <http://ela.kpi.ua/handle/123456789/23569>
7. Resource-saving technologies in the construction of geotechnical objects / Zuevska N.V., Zaichenko S.V., Shaydetska L.V., Vapnichna V.V. / [Electronic resource] monograph of Igor Sikorsky Kyiv Polytechnic Institute. Igor Sikorsky, 2018 – 202 p.  
<http://ela.kpi.ua/handle/123456789/22173>
8. Resonant energy-saving destruction of rocks: [Electronic resource] Monograph / Volume 1. Rotating magneto-hydrodynamic cavitation destruction of faces / O.M. Terentyev, A.Y. Kleshchev, P.A. Gontar, O.Y. Tverda. – Kyiv: KPI. Igor Sikorsky, 2018. – 149 p. (in Russian).  
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9. Resonance energy-saving destruction of rocks: [Electronic resource] monograph / volume 2. Explosive and mechanical loads of faces / O.M. Terentyev, S.M. Stovnyk, P.A. Gontar, A.Y. Kleshchov – Kyiv: Igor Sikorsky Kyiv Polytechnic Institute, 2018. – 161 p.  
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10. Resonance energy-saving destruction of rocks: [Electronic resource] monograph / vol. 2. Plasma-mechanical destruction of faces / O.M. Terentyev, A.I. Kryuchkov, A.Y. Kleshchov, P.A. Gontar. – Kyiv: KPI. Igor Sikorsky, 2018. – 147 p. (in Russian).  
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11. Kravets V.G. Extraction and loading works at quarries. [Text]: teaching. manual / V.V. Korobiychuk, V.G. Kravets, S.S. Iskov, R.V. Sobolevskyi, A.O. Kryvoruchko, O.M. Tolkach, V.O. Shlapak – Zhytomyr: ZhTU, 2017. – 440 p.
12. Kravets V. G. Thrifty methods of separation of stone blocks [Electronic resource]: monograph / V. G. Kravets, K. K. Tkachuk, T. V. Grebenyuk, A. L. Gan. – Electronic text data (1 file: 8.94 MB). Kyiv: NTUU "KPI them. Igor Sikorsky", 2016. – 216 p. – Title from the screen. – Access: <http://ela.kpi.ua/handle/123456789/18109>
13. Korobiychuk V.V. Design of stone-working enterprises. Ch. 1 [Text]: teaching. manual / S.S. Iskov, V.V. Korobiychuk, R.V. Sobolevsky. – Zhytomyr: ZhTU, 2016. – 228 p. (in Russian).
14. Kravets V.G. Physical Processes of Mining Production: Monograph // V.G. Kravets, V.V. Korobiychuk, V.V. Boyko (Art.). – Zh.: ZhTU Publ., 2015. – 408 p. – Refs.: p. 406–408. – 300 copies.
15. Kravets V.G. Influence of technogenic dynamic processes on the state of natural and engineering objects: monograph // O.O. Vovk, V.G. Kravets, V.M. Isaenko, O.O. Vovk (st.), N.S. Remez. – Kyiv: Drahomanov NPU Publishing House, 2014. – 404 p. – Refs.: pp. 400–403. – 300 copies.
16. Kravets V.G. Technique and Technology of Processing of Construction Rocks: Teaching Aid. / V.G. Kravets, O.M. Terentyev. – Kyiv: NTUU "KPI", 2013. – 216 p.
17. Zuevska N.V. Assessment of the quality of block raw materials and facing products from the natural stone. Part II: Teaching. manual / V.V. Korobiychuk, S.O. Zhukov, N.V. Zuevska, V.V. Boyko (junior). – Zhytomyr: ZhTU, 2013. – 152 p. (in Russian).
18. Boyko V.V. Problems of seismic safety of explosives in the quarries of Ukraine // V.V. Boyko. – Kyiv: LLC "Publishing House Steel", 2012. – 184 p. – Fig.: 79, tabl. 38, refs.: 87 titles.
19. Kravets V.G. Destruction of rocks by explosion: teaching aid. / V.G. Kravets, V.V. Korobiychuk, O.A. Zubchenko. – Zhytomyr: ZhTU, 2012. – 328 p.
20. Vovk O.O. Influence of underground mining works on the state of the environment // O.O. Vovk, V.M. Isaenko, V.G. Kravets, O.O. Vovk (junior); Ministry of Education and Science, Youth

and Sports of Ukraine, Nats. Ped. University named after M.P. Drahomanov. – Kyiv: Publishing House of the National Pedagogical University named after M.P. Drahomanov, 2011. – 543 p. (in Russian).

21. Zakusylo R.V. Means of initiating industrial charges of explosives // R.V. Zakusylo, V.G. Kravets, V.V. Korobiychuk. - Zhytomyr: ZhTU, 2011. – 212 p.

22. Samedov A.M. Stroitel'stvo miskikh podzemnykh struud: nauch. posob. / A.M. Samedov, V.G. Kravets. – K. NTUU "KPI", 2011. – 400 p.

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