

Profile of the educational program

General information	
The official name of the educational program	Civil Engineering
Specialty	192 Building and Civil Engineering
Branch of knowledge	19 Architecture and Construction
Higher education degree and title in the original language	Bachelor's, Bachelor's Degree of Building and Civil Engineering
Type of diploma and scope of educational program	Bachelor's Degree, single, 240 ECTS credits, term of study 3 years 10 months
Accreditation availability	Ministry of Education and Science of Ukraine Accreditation Certificate Series No. 21008299 The certificate is valid until July 1, 2028.
Cycle / level	The first (bachelor) level NQF of Ukraine - level 6 FQ-EHEA - the first cycle EQF-LLL - Level 6
Entry level education requirements	Full general secondary education; general rules for entry requirements
Language (s) of teaching	Ukrainian
Duration of the educational program	10 years
The purpose of the educational program	
Formation of general and professional competences necessary for solving problems in a field of civil engineering, systems of heat and gas supply, ventilation and conditioning, water supply and sewerage	
Characteristics of the educational program	
Subject area	<p>Objects of study and activity: technologies, buildings and engineering structures, processes of their design, creation, operation, storage and reconstruction.</p> <p>The purpose of training: formation of higher education students with a set of knowledge, skills and abilities necessary for solving complex specialized problems and solving practical problems in a field of construction and civil engineering.</p> <p>Theoretical content of the subject area: concepts, principles, methods and techniques of creation and maintenance of buildings and engineering structures.</p> <p>Methods, techniques and technologies: experimental methods of research of materials and processes, methods of physical and mathematical modeling, designing methods, technologies of manufacturing structures, materials and products, technologies of construction of buildings and engineering structures, destruction of construction sites and waste disposal.</p> <p>Instruments and equipment: experimental measuring equipment, hardware and software required for field, laboratory and remote sensing in construction and civil engineering.</p>
Education program orientation	Educational and professional program

The main focus of the educational program and specialization	Civil engineering facilities, heat and gas supply systems, ventilation and air-conditioning, water supply and sewerage, installation technology, reconstruction of engineering systems for buildings and structures <i>Keywords:</i> civil engineering, designing, construction, building structures, operation, heat and gas supply, ventilation, air conditioning, water supply, sewerage
Features of the program	Educational program provides theoretical knowledge and practical skills in solving problems of design and operation of modern systems of heat and gas supply, ventilation and conditioning, water supply and sewerage. The list of selective educational components is expanded and adapted in accordance with industry and labor market trends.
Suitability of graduates to employment and further education	
Suitability for employment	Occupations, professional job titles (Occupational Classifier DK 003: 2010). 3112 - Construction technician: – Structure Warden – Estimator – Architectural Design Technician – Technician of sanitary engineering systems – Construction technician – Construction technician (road construction) – Water Engineer – Technician-designer (construction) – Caregiver – Laboratory technician (construction) – Designer technician – Heating engineer (construction) – Technologist (manufacture of building products and structures) 3118 - Draughtsman – Technician Designer – Draughtsman Designer 3119 - Other technical specialists in the field of physical sciences and engineering – Instructor for operational, production, technical and organizational issues – Technician for organizing labor – Technician from preparation of production – Technician from preparation technical documentation – Technician from planning 3151 - Construction and fire inspectors – Inspector for the control of the technical maintenance of buildings
Further training	Opportunity to study according to a program of the second (master's) level of higher education and to acquire additional qualifications in a system of education during life.
Teaching and assessment	
Teaching and learning	Student-centered learning, problem-oriented learning, lectures, practical classes, laboratory work, independent work, consultations, project work, preparation of qualifying work. Teaching methods: problem-solving, illustrations and demonstrations, partial search, research, practical.
Evaluation	Types of control: current, modular, final. Forms of control: oral and written questioning, including exams; test tasks, including computer testing in Moodle system; laboratory reports;

	presentations; defense of term papers and projects, reports on practices; Certification: public defense of qualification work.
Program competencies	
Integral competence (IC)	Ability to solve complex specialized problems of construction and civil engineering
General competencies (GC)	<p>GC01. Ability to abstract thinking, analysis and synthesis.</p> <p>GC02. Knowledge and understanding of a subject area and professional activity.</p> <p>GC03. Ability to communicate in a state language both orally and in writing.</p> <p>GC04. Ability to communicate in a foreign language.</p> <p>GC05. Ability to use information and communication technologies.</p> <p>GC06. Ability to search, process and analyze information from various sources.</p> <p>GC07. Interpersonal skills.</p> <p>GC08. Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge / types of economic activity).</p> <p>GC09. Ability to exercise one's rights and responsibilities as a member of society; awareness of value of civil (free democratic) society and a need for its sustainable development, a rule of law, human and civil rights and freedoms in Ukraine.</p> <p>GC10. Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding a history and patterns of development of a subject area, its place in a general system of knowledge about nature and society and in the development of society, techniques and technologies. active recreation and a healthy lifestyle.</p>
Special (professional) competencies (PC)	<p>PC01. Ability to use conceptual scientific and practical knowledge in mathematics, chemistry and physics to solve complex practical problems in a field of construction and civil engineering.</p> <p>PC02. Ability to critically comprehend and apply basic theories, methods and principles of economics and management for rational organization and management of construction production.</p> <p>PC03. Ability to design building structures, buildings, structures and engineering networks (according to specialization), taking into account engineering and technical and resource-saving measures, legal, social, environmental, technical and economic indicators, scientific and ethical aspects, and modern requirements of regulatory documentation in a field of architecture and construction, environmental protection and occupational safety.</p> <p>PC04. Ability to select and use appropriate equipment, materials, tools and methods for designing and implementation of technological processes of construction production.</p> <p>PC05. Ability to use computer-aided design systems and specialized application software to solve engineering problems in construction and civil engineering.</p> <p>SK06. Ability to engineering activities in a field of construction, preparation and use of technical documentation.</p> <p>PC07. Ability to take responsibility for making and making decisions in a field of architecture and construction in unpredictable working contexts.</p> <p>PC08. Awareness of principles of designing residential areas.</p> <p>PC09. Ability to organize and manage professional development of individuals and groups in a field of architecture and construction.</p> <p>PC10. Ability to calculate and analyze processes of thermodynamics and</p>

	<p>heat and mass transfer in terms of fundamental physical laws, principles and knowledge.</p> <p>PC11. Ability to develop and operate systems of complex, including automated, management of facilities and systems of engineering support of buildings and structures.</p> <p>PC12. Ability to select modern equipment, technologies and appropriate measures to ensure proper organization of construction and technological processes in civil engineering systems, taking into account requirements for production environment and workplace equipment.</p>
Program learning outcomes	
Programmatic learning outcomes (PLO)	<p>PLO01. To apply basic theories, methods and principles of mathematical, natural, social sciences, humanities and economics, modern models, methods and software to support decision-making to solve complex problems of construction and civil engineering.</p> <p>PLO02. To participate in research and development in a field of architecture and construction.</p> <p>PLO03. To present results of their own work and argue their position on professional issues, professionals and non-professionals, fluent in state and foreign languages.</p> <p>PLO04. To design and implement technological processes of construction production, using appropriate equipment, materials, tools and methods.</p> <p>PLO05. To use and develop technical documentation at all stages of life cycle of construction products.</p> <p>PLO06. To apply modern information technology to solve engineering and management problems of construction and civil engineering.</p> <p>PLO07. To perform data collection, interpretation and application, including through searching, processing and analysis of information from various sources.</p> <p>PLO08. To use modern building materials, products and structures based on knowledge of their technical characteristics and manufacturing technology.</p> <p>PLO09. To design building structures, buildings, structures, engineering networks and technological processes of construction production, 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, time and other restrictions in a field of architecture and construction, environmental protection and labor safety.</p> <p>PLO10. To make and implement rational decisions on organization and management of construction processes in construction of sites and their operation.</p> <p>PLO11. To assess compliance of projects with principles of design of urban areas and infrastructure and municipal facilities.</p> <p>PLO12. To have in-depth cognitive and practical skills, mastery and innovation at a level required to solve complex specialized tasks in a field of construction and civil engineering (according to specialization).</p> <p>PLO13. To carry out organization and management of professional development of individuals and groups in a field of architecture and construction.</p> <p>PLO14. To demonstrate knowledge and understanding of basics of thermodynamics and heat and mass transfer, which occur in technological processes of engineering systems of buildings and structures.</p> <p>PLO15. To demonstrate skills to solve problems of automatic control and informatization of technological processes of construction, operation and maintenance of facilities and systems of engineering support of buildings</p>

	<p>and structures.</p> <p>PLO16. To introduce modern advanced technologies and materials during designing, operation and reconstruction of civil engineering systems and facilities in order to ensure their effective functioning and understanding of possible impact of engineering results on social sphere.</p>
Resources for program implementation	
Staffing	All scientific and pedagogical workers have qualifications according to educational components, experience of practical and scientific and pedagogical activity, regularly improve their qualification through participation in scientific projects, conferences, internships in institutions of Ukraine and foreign countries.
Logistics	<p>Logistics of the educational program meets the requirements and provides an opportunity for effective training of applicants.</p> <p>In educational process, specialized laboratories are used, equipped with multimedia installations, models, laboratory equipment for laboratory work: "Water purification technologies", "Water supply and drainage"; "Engineering hydraulics and pumps".</p>
Information and training support	<p>Educational components are provided with teaching materials posted in relevant courses on distance learning platform Moodle https://dl.kname.edu.ua/.</p> <p>Applicants have free access to modern professional literature and periodicals, Scopus and Web of Science databases, Springer resources, ScienceDirect database from Elsevier publishing house, scientific library http://library.kname.edu.ua/index.php/uk/, electronic repository http://eprints.kname.edu.ua.</p>
Academic mobility	
National Credit Mobility	In accordance with the Regulations on Academic Mobility of Students, Graduate Students, Doctoral Students, Research Teachers and Researchers of O.M. Beketov NUUE
International credit mobility	Opportunity to participate in international credit mobility programs under agreements on international academic mobility of O.M. Beketov NUUE
Training of foreign higher education applicants	In accordance with Admission Regulations to O.M. Beketov NUUE