

Education program profile

General information	
The official name of the education program	Industrial and Civil Engineering
Specialty	192 Construction and Civil Engineering
Field of knowledge	19 Construction and Architecture
Higher education degree and the title of qualification in the original language	Bachelor, Bachelor of Engineering
Type of diploma and scope of education program	Bachelor's degree, unitary, 240 ECTS credits, term of apprenticeship is 3 years 10 months
Accreditation	Ministry of Education and Science of Ukraine, Accreditation Certificate UD 21008299 validity period - until July 01, 2028
Cycle/level	The first (Bachelor's degree) level NQF of Ukraine - Level 7 FQ-EHEA - First Cycle EQF-LLL - Level 6
Academic admission requirements	The availability of Complete General Secondary Education
Language(s) of instruction	Ukrainian, English
Duration of the education program	5 years
Education program objective	
To provide training for highly qualified specialists in the field of construction and design of structures that can solve complex problems, conduct original independent scientific research and carry out scientific and pedagogical activities.	
Education program specifications	
Subject area	<p>Objects of study: the processes of design, creation, operation, storage and reconstruction of construction sites, engineering systems and technological processes.</p> <p>Learning objectives: training for the design and construction of buildings, engineering structures and systems, the manufacture of building structures, operation and reconstruction of construction sites.</p> <p>The theoretical content of the subject area: theoretical foundations of building technologies, theories, principles, concepts and methods of fundamental and general engineering sciences.</p> <p>Methods, techniques and technologies: methods of physical and mathematical modeling, design techniques, technologies for the construction of building sites and engineering systems, manufacturing techniques of structures and materials.</p> <p>Tools and equipment: construction machines, tools and equipment, geodetic instruments, climatic equipment, instrumentation necessary for the functioning of engineering systems, technological equipment for the manufacture of structures and products, technological, information, instrumental, metrological, diagnostic and organizational support of construction .</p>
Orientation of the education program	Education and professional program

The main focus of the education program and specialization	Special education in “Architecture and Construction” Key words: reinforced concrete structures, metal structures, wooden structures, foundations and foundations, construction technology, construction equipment, building materials, reconstruction of buildings and structures
Program features	
Graduate employability and further academic studies	
Employability	A graduate with a Bachelor's degree in engineering is capable of performing such professional work (according to the Common Classifier 003: 2010): 1223.2 - chiefs (other managers) and foremen of construction sites (divisions) - Contractor - Foreman of construction and installation works 1491 – Managers in the housing and communal services 2142.2 - Civil engineering engineers - Construction Supervision Engineer - Design estimates engineer - Civil engineer - Civil engineer for the restoration of monuments of architecture and urban planning - Design engineer (civil engineering) - Technologist (building materials) 2149.2 - Occupational Safety Engineer 3112 - construction technician: - Building ranger - Estimator - Architectural engineering technician - Technician of sanitary systems - Construction Technician - Construction technician (road construction) - Technician-designer (construction) - Supervisor Technician - Laboratory technician (construction) - Design Technician - Heating technician (construction) - Technician-technologist (production of building products and structures) 3118 - Draftsmen - construction technician - Draftsman 3119 - Other technical experts in the field of physical sciences and technology - Instructor for operational, industrial, technical and organizational issues - Labor rationing technician - Production preparation technician Technical Documents Technician
Further academic studies	Second-level higher education. Master’s degree
Instruction and Assessment	
Teaching and learning	Student-centered training, lectures, practical exercises, independent work using textbooks, teaching aids, practical training, consultations, project

	work, preparation of the Bachelor's qualification work.
Assessment	<p>ECTS system that provides students with grades for all types of classroom and extracurricular educational activities aimed at mastering the educational program workload.</p> <p>Written exams, internship report, presentation of individual tasks. Intermediate modular control, final control in the form of exams and tests in the relevant disciplines, settlement and graphic work, term papers and projects.</p> <p>Public defense of the Bachelor's qualification work.</p>
Program Learning Outcomes	
Standard program learning outcomes	<p>Apply the basic theories, methods and principles of mathematical and natural sciences in the field of professional activity.</p> <p>Apply basic professional and scientific knowledge in the field of social and humanitarian and economic sciences in cognitive and professional activities.</p> <p>Demonstrate oral and written communication skills in the state and foreign languages, using interpersonal interaction skills, working in an international context with specialists and non-specialists in the field, using modern means of communication.</p> <p>Mastering work skills to effectively work independently (course and graduation paper) or in a group (laboratory work, including the acquisition of leadership skills in their implementation), the ability to get the desired result within a limited time period with an emphasis on professional integrity and eliminating the possibility of plagiarism.</p> <p>Proficient in the state and foreign languages, ability to use professional terminology.</p> <p>Demonstrate the ability to work with geodetic instruments and use topographic materials for the design and creation of construction objects and engineering networks.</p> <p>Use and develop technical documentation, including the use of modern information technologies.</p> <p>Demonstrate the ability to effectively use the modern building materials, products and structures based on the knowledge of their technical characteristics and manufacturing technology.</p> <p>Create or apply space-planning solutions for further design, including the use of information technology.</p> <p>To assess the impact of climatic, engineering-geological and environmental features of the construction area during the construction design of construction projects.</p> <p>Determine and evaluate the load and stress-strain state of soil bases and load-bearing structures of buildings (structures), including the use of modern information technologies.</p> <p>To develop constructive solutions for construction projects on the basis of knowledge of the nomenclature and structural forms, the ability to calculate and design building structures and their connection nodes.</p> <p>Develop and evaluate technical solutions for engineering networks.</p> <p>Adhere to modern requirements of regulatory documents in the field of construction.</p> <p>Perform and analyze economic calculations of the cost of construction projects.</p> <p>Design technological processes for the construction and decoration of buildings (structures) and the installation of engineering systems and networks.</p> <p>Organize and manage construction processes during the construction of construction sites and their operation, repair and reconstruction, taking</p>

	<p>into account the labor protection requirements.</p> <p>Demonstrate an understanding of the design principles of urban areas as well as infrastructure and urban facilities.</p> <p>Ensure reliable and safe operation of building structures, constructions and utilities.</p> <p>Apply the basic principles, theories and methods of structural mechanics to calculate the elements of buildings and structures under the action of loads and impacts of various nature, taking into account their interaction using computer-aided design systems.</p> <p>Demonstrate the ability to calculate and design reinforced concrete (monolithic and prefabricated), stone, metal and wooden structures and their connection units using the requirements of regulatory documents, providing reliable and economically sound design solutions.</p> <p>To be able to analyze and apply the results of engineering and geological surveys, to justify the selection of bearing soil layers of the foundation, to design foundations of various types and to know the basic approaches for construction in areas with complex engineering and geological conditions.</p> <p>Ensure the organization of construction of buildings and engineering structures of various architectural and technical complexity using modern energy-efficient structural materials and technologies.</p> <p>When designing organizational and technological solutions for the construction of buildings and structures, apply the base of modern technologies of construction production and be able to introduce them into practical activities.</p> <p>Introduce effective methods of managing complex construction projects with awareness of responsibility for decisions made and ensuring the quality of work.</p> <p>Predict and be able to evaluate the economic feasibility of the construction of buildings and engineering structures at the design stage.</p>
<p>Higher education program outcomes</p>	<p>Assess and predict the possible consequences when using the underground space.</p> <p>Apply and implement innovative materials and technologies in construction.</p> <p>Apply modern calculation methods and know the methods for establishing the technical condition of building structures.</p> <p>To be able to design building structures for various purposes using modern materials and technologies.</p> <p>To be able to apply research methods for silicate technological processes in the construction industry.</p>
<p>Resource support for education program implementation</p>	
<p>Staff assistance</p>	<p>The educational program is provided by scientific and pedagogical staff of 80 people, including 4 Doctors of Sciences, Professors, 50 Candidates of Sciences, Associate Professors, 21 Senior teachers and 5 assistants.</p>
<p>Logistics</p>	<p>The state of the material and technical base complies with the requirements and provides the opportunity for effective implementation of the educational process and the organization of research work.</p> <p>For training of applicants, 30 laboratories and specialized offices are used. Specialized computer laboratories of departments and the university as a whole have modern equipment and software. The existing facilities (educational, pedagogical, domestic, sports and others) of the university comply with sanitary standards and regulations, and the state building</p>

	standards of Ukraine.
Information and educational-methodological support	The content and quality of information and educational-methodological support meets the requirements and is sufficient to ensure high-quality training of specialists in the current context. Information on education programs, educational, scientific and pedagogic activities, the university structure, admission rules, event announcements, news, etc. is distributed on the official website of the University (https://www.kname.edu.ua/). KNUUE named after O. M. Beketov has a library, which provides scientific and fiction literature subscription as well as reading rooms for 540 seats. The university has an electronic repository (http://eprints.kname.edu.ua/), which provides access for applicants to higher education in the form of methodological and educational materials (educational and methodical complexes of disciplines, materials for independent and individual work of students, practice programs, etc.), as well as the electronic version of the scientific and technical collection “Communal Services of Cities” and materials of scientific conferences. Students and teachers are provided with access to the Moodle distance learning system (http://cdo.kname.edu.ua). All library computers are connected to the Internet. Access to Internet resources using Wi-Fi technology is organized in the reading room. There is access to scientometric databases Web of Science and Scopus.
Academic mobility	
National Credit Mobility	In accordance with the Student Academic Mobility Regulations, postgraduate students, doctoral students, scientific-pedagogical and scientific workers of O.M. Beketov National University of Urban Economy in Kharkiv (O.M. Beketov NUUE)
International Credit Mobility	
Training of foreign higher education applicants	Training of foreign citizens in the state and foreign languages is provided.