

**Code and title of specialty (direction):** 192 "Building Industry and Civil Engineering"

**Title of specialization:**

**Code and title of the field of knowledge:** 19 "Architecture and Building Industry"

**Qualifications:** Bachelor's Degree in Building Industry and Civil Engineering

**Number of credits:** 240 ECTS credits

**Grade of higher education:** the first, bachelor grade, corresponds to the sixth qualification level of the Ukrainian National Qualification Framework.

**Requirements to the previous education grade:** an individual has the right to get Bachelor's Degree subject to having completed secondary education or education based on the bachelor educational program on the appropriate specialty. Nostrification will be required if the previous grade was obtained in another country.

**Qualification requirements:** the document on higher education is issued to a person who successfully completed an educational program and got a certificate. Final certification is carried out by means of evaluation of the level of competences formation. The form of certification provides for defense of the final essay.

**Program study results:** to use conceptual knowledge including knowledge of the modern achievements to solve complex and unforeseen problems in the field; to use theory, principles, methods and concepts of general engineer sciences in the course of teaching and professional activities; to collect, interpret information and choose the methods and tools to solve professional problems; to use innovative approaches to solve professional problems; to communicate information, ideas, problems, solutions and its own experience in the field of professional activities to professionals and non-professionals; to manage complex actions or projects; to form a communication strategy; to use a foreign language at a professional level; to be responsible for the professional development of separate individuals and/or group of individuals; to be responsible for decision-making in unpredictable conditions; to study with a high level of autonomy.

**Design and technological professional activities:** to estimate the level of suitability of territory for locating different functional zones of a settlement; to develop functional zoning scheme and the balance of the settlement territory or its structural element; to develop classification of the road network in the existing settlement; to calculate technical and economic indexes of the settlement road network; to use volumetric planning decisions for further design of building projects; to classify

elements of buildings by its functional purpose; to make it possible to use appropriate building materials; to choose structural building materials by its structure, physical and mechanical properties; to choose highly insulating materials while designing insulation building and construction systems of different purposes; to identify full road capacity in the street and develop a typical cross-section streets that can be designed or reconstructed; to design longitudinal and high-altitude cross-sections; to examine the intensity of traffic having processed camera results by methods of mathematical statistics; to built cartogram of passengers, vehicles and pedestrians flow on the road map; to select and use existing standards and other metrological documentation for building projects; to perform architecture and building as well as engineering drawings; to be good at using graphic documentation of building projects and engineering; to apply methods and means of computer graphics when making building projects and engineering documentation; to use the results of engineering and geological, engineering and geodetic as well as hydrogeological explorations; to determine the type and the state of soil by means of geological explorations, its physical and mechanical properties as well as its suitability for foundation of building; to assess the influence of engineering and geological processes on the building site; to make classification of building site construction scheme; to determine the existing load on building structures; to determine physical and mechanical properties of building materials on the basis of reference data; to calculate metal and ferroconcrete structural elements; to calculate bolted and welded connections of building structures; to determine simple types of foundations and make calculations for simple geological conditions; to make calibration and fault finding of relief and determine its forms, dips, level differences; to design vertical planning of the area with definition of design elevation of the building by methods of design horizontals; to design vertical planning by means of high-altitude profiles construction; to calculate the volume of earthwork and develop the plan of earth masses; to determine parameters of rainfall run-off while designing rainwater drainage networks; to select the appropriate construction elements for rainwater drainage networks; to take into account the requirements of water supply and drainage system while solving building problems; to calculate thermal resistance of frame fillings; to determine the necessary air exchange in ventilation rooms; to analyze estimate documents of building sites; to make local estimates for different types of work; to make economic calculations of efficiency of implementation of energy saving measures into the building process; to develop the project of organization of construction and the project of work completion; to develop long-term plans to repair domestic buildings and improve landscape of adjacent territories.

**Organizational professional activity:** to perform marking geodetic work on the building site; to develop and ensure arrangements for organization of building industry; to develop and provide building process with necessary materials and constructions; to choose companies that meet customer requirements for building products; to ensure the equipment at building site with the following construction technologies: machines, mechanisms, devices, power tools etc. to ensure safe working conditions; to administer directly building and construction works; to maintain technical documentation related to the performance, organization and planning of work at the site; to ensure compliance with technology requirements during building processes; to organize the construction of water supply from the existing water supply network to the detached building or group of buildings; to organize the building of sewage water pipeline from the detached building or group of buildings to the existing drainage system; to organize work execution on equipping the internal part of building with sanitary appliances; to correct the placement of beautification elements within the building site.

**Management professional activities:** to plan design and organization activities; to monitor design and organization activities; to improve design and organization activities; to monitor and correct schedules of building processes.

**Employment possibilities:** Bachelor in the specialty 192 "Building and Civil Engineering" can be employed by companies, small businesses, institutes and organizations specialized in building industry and management of building processes; design of metal, ferroconcrete, masonry structures, groundworks and foundations as well as structural elements of buildings in general; solving concrete problems regarding water supply, drainage system, heat and gas supply as well as ventilation; to work out project documentation for building, exploitation and reconstruction of ground-based buildings and networks.

**Access to further study:** Bachelor in the specialty 192 "Building and Civil Engineering" can continue studying to get Master education and qualification level in the field of 19 "Architecture and Building", 13 "Mechanical Engineering", 18 "Production and Technologies", 26 "Civil Security".

**Degree-granting department:** Department of Urban Building and Management;

**Institute / Faculty:** Institute of Transport and Logistics

**Head of educational program:** Associate Professor, Ph.D. in Technical Sciences Biloshytska N.I., bud@snu.edu.ua; tel: 0666279753.