Profile of the educational program

General information	
The official name of the educational program	Hydrotechnical Construction, Water Engineering and Water Technologies
Specialty	194 Hydrotechnical Construction, Water Engineering and Water Technologies
Branch of knowledge	19 Architecture and construction
Higher education degree and title in the original language	Bachelor's, Bachelor's Degree in Hydrotechnical Construction, Water Engineering and Water Technologies
Type of diploma and scope of educational program	Bachelor's Degree, single, 240 ECTS credits, term of study 3 years 10 months
Accreditation availability	The program is being implemented in 2018. MES Order No. 43-l dated 10.03.2017
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	Until 2022
Internet address of permanent placement of educational program description	https://vvov.kname.edu.ua
The purpose of the educational program	
Training of specialists capable of solving complex specialized tasks and practical problems in process of professional activity or training, which involves application of theoretical knowledge for designing, construction, operation and reconstruction of hydraulic, water management and environmental facilities.	
Characteristics of the educational program	
Subject area	***Objects of study and professional activity***: structure and processes of creation and functioning of hydraulic, hydro-ameliorative, water purification and other objects of water engineering. ***Learning objectives***: formation of higher education students with a set of knowledge, skills and abilities needed to solve complex specialized problems and practical problems, characterized by complexity and uncertainty of conditions in field of hydraulic engineering, water engineering and water technology. ***Theoretical content of the subject area***: theoretical foundations of hydraulic engineering, water engineering and water technologies. ***Methods, techniques and technologies***: methods of collecting, processing and interpreting information; methods of engineering calculations, field and laboratory research; technologies of construction, operation and reconstruction of objects of study and professional activity. ***Tools and equipment***: geodetic instruments, construction machinery, devices and equipment, control and measuring instruments,

	means of technological, informational, instrumental, metrological and diagnostic software for solving applied problems in construction and water engineering, specialized software.
Orientation of the educational program	Educational and professional program
The main focus of the educational program and specialization	Formation of ability to justify a choice and determine the rational parameters of structures and technological schemes of water treatment and purification in industry, agriculture and utilities. *Keywords*: hydrotechnical structures, water engineering, water technologies, water use, water consumption, water treatment, water supply, sewerage, water management.
Features of the program	The program provides students with higher theoretical knowledge, skills, abilities and other competencies sufficient to solve complex professional problems in a field of hydraulic engineering, water engineering and water technology. 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	Graduates of the program are able to do professional work (according to the Common Classifier 003: 2015): 3112 - construction technician: - Structure Warden - Estimator - Technician of sanitary engineering systems - Construction technician - Caretaker - Laboratory technician (construction) - Designer technician 3115 - Mechanical technicians: - Technician for the operation of networks and structures of water supply and sewerage facilities - Equipment maintenance and repair technician 3118 - Drawers - Designer - Drawing Designer 3119 - Other technical specialists in the field of physical sciences and engineering - Production preparation technician - Technical documentation preparation technician - Planning technician 3212 - junior experts in agronomy, forestry, water management and Protected Natural case - Hydraulic technologist - Hydraulic technician
Further training	Continuation of education at the second (master's) level and acquisition of additional qualifications in a system of adult education
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 and practical problems in a field of hydraulic engineering, water engineering and water technologies, characterized by complexity and uncertainty of conditions, based on application of theories and methods of natural and engineering sciences.
General competencies (GC)	GC1. Ability to exercise their rights and responsibilities as a member of society, to realize a values of civil (free democratic) society and need for its sustainable development, a rule of law, human rights and freedoms and the citizen of Ukraine. GC2. Ability to preserve and increase moral, cultural, scientific values and achievements of society based on understanding history and patterns of development of subject area, its place in general system of knowledge about nature and society and in development of society, techniques and technologies. active recreation and a healthy lifestyle. GC3. Ability to abstract thinking, analysis and synthesis. GC4. Knowledge and understanding of a subject area and professional activity. GC5. Ability to communicate in a foreign language. GC6. Skills in using of information and communication technologies. GC7. Ability to learn and master modern knowledge. GC8. Safe activities skills. GC9. Ability to evaluate and ensure quality of work performed. GC10. Desire to preserve environment.
Special (professional) competencies (PC)	PC1. Ability to apply physical and mathematical apparatus, theoretical, computational and experimental methods and models of research in a field of professional activity. PC2. Ability to apply in professional activities achievements of science, innovative and computer technologies, modern machines, equipment, materials and structures. PC3. Ability to use geodetic instruments and cartographic materials in designing, removal of projects in kind and instrumental quality control in construction and reconstruction of professional activities. PC4. Ability to assess needs of consumers in water resources and anthropogenic pressure on water bodies. PC5. Ability to perform engineering calculations of water flow parameters and structural elements of professional activities. PC6. Ability to effectively use modern building materials, products and structures in water engineering in designing, construction and reconstruction of professional facilities. PC7. Ability to develop landscaping and design solutions. PC8. Ability to determine and evaluate loads and stress-strain states of soil foundations and engineering structures. PC9. Ability to carry out engineering surveys, calculations and designing of objects of professional activity. PC10. Ability to develop technological processes of construction works with their implementation in construction production by modern methods and means. PC11. Ability to assess existing raw materials and production base of

	construction industry and calculate their needs. PC12. Ability to develop engineering and organizational measures to ensure a good condition of surface water and groundwater on basis of modern monitoring systems. PC13. Ability to implement innovative technologies, modern machines and equipment in construction, operation and reconstruction of professional facilities. PC14. Ability to implement energy and resource efficient water technologies in a field of professional activity. PC15. Ability to organize and control rational use of water resources. PC16. Ability to carry out technical operation, supervision and care of condition of objects of professional activity, inspection of their technical condition, their maintenance and repair. PC17. Ability to identify causes and negative consequences of harmful effects of water, to apply appropriate methods of protection of territories, to make calculations and design protective structures. PC18. Ability to determine an impact of nature on environment, to justify measures for landscaping (reclamation measures, including hydraulic, cultural, chemical, agro-technical, agro-forest reclamation, etc.). PC19. Ability to calculate technical and economic indicators of designed and functioning objects of professional activity. PC20. Ability to collect, systematize and analyze source data, use provisions of legislation and building codes when designing and determining operating conditions of water engineering facilities. PC21. Ability to use methods of selection, development and design of engineering structures, technological schemes and systems of water engineering, their structural elements.
Program learning outcomes	
Programmatic learning outcomes (PLO)	PLO1. To formulate tasks for solving problem situations in professional and / or academic activities. PLO2. To determine ways of solving engineering and technical problems in professional activity, to interpret their results with arguments. PLO3. To perform experimental studies of water flow, evaluate and argue a value of their results in designing of professional activities. PLO4. To describe structure of objects of professional activity, explain their purpose, principles and modes of operation. PLO5. To know technological processes of manufacture and use of building materials, manufacturers and structures. PLO6. To identify and listen to climatic, engineering and geological, hydrogeological, hydrological and ecological features of a territory during designing, construction and operation of professional activities. PLO7. To perform engineering calculations of soil foundations and structures of objects of professional activity. PLO8. To solve qualitative and quantitative tasks on water extraction, preparation and distribution, wastewater treatment and input. PLO9. To find optimal engineering solutions when choosing water technologies, construction facilities, energy saving measures in a field of professional activity. PLO10. To use modern information technologies in designing, construction and operation of professional activities. PLO11. To perform technical and economic processing of design solutions, engineering measures, technological processes.

	PLO12. To organize and manage technological processes of construction, operation, repair and reconstruction of professional activities, in accordance with requirements of labor protection, life safety and environmental protection. PLO13. To carry out technical operation, inspection, inspection and inspection of condition of professional activities. PLO14. To determine measures for rational use, protection and creation of water and land resources, improvement of hydrological and ecological condition of massifs of surface and ground waters, natural lands. PLO15. To perform hydrological, hydraulic and hydraulic calculations using modern software packages and specialized databases. PLO16. To identify, generalize and solve problems that arise in a process of professional activity, respond to a work performed. PLO17. To assess environmental consequences of man-made activities in compliance with legal and social norms. PLO18. To apply technical regulations and legal norms in operation of hydraulic facilities. PLO19. To determine indicators of natural and man-made conditions of a territory, object, working area, as well as construction materials and quality of finished products using specialized tools, devices and equipment in accordance with standards and requirements of metrological service of Ukraine. PLO20. To choose and listen to requirements for engineering activities that have necessitated sustainable development of a system and objects of professional activity. PLO21. To select, develop and design a dispute, technological schemes and internal engineering system that ensure establishment of established requirements, which provides information on non-technical aspects, formation and definition of adequate design methodology.
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	Logistics of the educational program meets the requirements and provides an opportunity for effective training of applicants. 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".
Information and training support	Educational components are provided with teaching materials posted in relevant courses on distance learning platform Moodle https://dl.kname.edu.ua/. 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.
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