

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	Master's, Master's Degree in Hydrotechnical Construction, Water Engineering and Water Technologies
Type of diploma and scope of educational program	Master's Degree, single, 90 ECTS credits, term of study 1 year 4 months
Accreditation availability	Ministry of Education and Science of Ukraine Accreditation Certificate Series YД No. 21008768 The certificate is valid until July 1, 2024.
Cycle / level	Second (master's) level National Registry Company of Ukraine - level 8 FQ-EHEA - second cycle EQF-LLL - Level 7
Entry level education requirements	Bachelor's, specialist's degree; general rules for entry requirements
Language (s) of teaching	Ukrainian
Duration of the educational program	5 years
The purpose of the educational program	
	The development in higher education applicants' complex of knowledge, skills and competences for use in professional activities in the sphere of hydrotechnical engineering, hydraulic engineering and water technology.
Characteristics of the educational program	
Subject areacc	Objects of study: scientific foundations, technologies, construction sites, structures and equipment in hydraulic engineering construction, water engineering and water technologies. Objects of professional activity: - all objects of industry and urban economy where water is used or its quality controlled (waterworks, sewage treatment plants, environmental services of companies, waterbodies regulatory authorities, hydraulic facilities, towns and semiurban centers utility services); - natural and technogenic complexes, engineering and ecological systems, environment-oriented complexes, water utilization systems and other natural and technogenic complexes, that improve nature elements value
Orientation of the educational program	Educational and professional
The main focus of the educational program and specialization	Overall Keywords: hydrotechnical structures, water engineering, water technologies, water use, water consumption, water purification, water supply, sewerage, water management
Features of the program	The program envisages the acquisition of theoretical knowledge, skills, and other competences by applicants for the development and implementation of innovative energy and resource efficient water

	<p>technologies.</p> <p>Professional orientation of the program: formation of ability to predict the needs of consumers in water resources, to develop schemes of integrated use and protection of water, to organize rational use of water resources</p>
Suitability of graduates for employment and further education	
Suitability for employment	<p>Graduates of the program are able to perform professional work according to the codes ДК 003: 2010:</p> <p>2142 - Experts in the sphere of civil engineering</p> <ul style="list-style-type: none"> - Researchers (civil engineering) - Civil engineers <p>2149 - Professionals in other engineering spheres</p> <ul style="list-style-type: none"> - Research assistants (other spheres of engineering) - Engineers (other spheres of engineering)
Further training	Continuation study at the third (educational-scientific) level of higher education.
Teaching and assessment	
Teaching and learning	<p>Student-centered learning, problem-based and differentiated learning technology, technology of intensification and individualization of learning, information technology, technology of developmental learning, credit transfer system of organization of teaching process, e-learning in the Moodle system, self-learning, research-based learning.</p> <p>Teaching is conducted in the form of: lectures, multimedia lectures, interactive lectures, practical classes, laboratory works, self-study on the basis of textbooks and lecture notes, teachers consultations, preparation of master's qualification work.</p>
Evaluation	<p>Cumulative rating system, which provides student evaluation for all types of classroom and extracurricular learning activities, aimed at mastering the educational load from the educational program</p> <p>Assessment of academic achievement is carried out on a 100-point (rating scale (ECTS), a national 4-point scale ("excellent", "good", "satisfactory", "unsatisfactory") and verbal ("passed", " failed") systems.</p> <p>Types of control: current, thematic, periodic, modular, final, self-control.</p> <p>Forms of control: oral and written questioning, including exams; test tasks, including computer-based testing in Moodle; laboratory reports; presentations; protection of course papers and projects, practice reports; defence of master's qualification work.</p>
Program learning outcomes	
Program learning outcomes defined by the standard	<p>PLO01. To be able to set and / or solve innovative / scientific problems and problems of hydraulic engineering that requires updating and integration of knowledge, including in the conditions of incomplete / insufficient information and conflicting requirements.</p> <p>PLO02. To be able to plan the innovation / research task independently, to interpret reasonably the results and formulate conclusions.</p> <p>PLO03. To be able to carry out research and / or innovation activities in the professional sphere.</p> <p>PLO04. To know at the level of the latest achievements the basic concepts of hydraulic engineering, sustainable development and methodology of scientific knowledge.</p> <p>PLO05. To possess a methodology for conducting research in the field of professional activity, and be able to evaluate the adequacy of results.</p> <p>PLO06. To demonstrate awareness of the latest principles and methods of protecting and restoring water resources.</p> <p>PLO07. To apply the principles and the latest methods of calculation and</p>

	<p>design of objects of professional activity using modern hydro and geoinformational technologies.</p> <p>PLO08. To demonstrate the ability to organize collective activities in the planning and implementation of projects for the construction of professional objects, their repair and reconstruction, taking into account available resources and time constraints.</p> <p>PLO09. To identify technologies and develop integrated measures for the rational use, conservation and restoration of water resources, improving the hydrological and environmental status of water bodies.</p> <p>PLO10. To know the principles of personnel and resource management, basic approaches to decision making in the context of incomplete / insufficient information and conflicting requirements.</p> <p>PLO11. To be able to i clearly and unequivocally their own conclusions about the problems of hydraulic engineering, as well as the knowledge and explanations that substantiate them, to specialists and non-specialists, in particular to the students.</p> <p>PLO12. To be able to communicate in a foreign language in the field of professional activity.</p>
Program educational outcomes defined by the higher education institution	<p>PLO01. The ability to explain the processes that occur at the main stages of research, design, operation, maintenance, reconstruction of hydraulic engineering and water engineering.</p> <p>PLO02. The ability to substantiate optimal design solutions for hydrotechnical construction, water engineering and water technologies, taking into account their specific features, to further determine the optimal mode of operation.</p> <p>PLO03. To be able to provide instructions on the operation of equipment and check the technical condition and residual life of objects, fitting and equipment, development of technical documentation for repair.</p> <p>PRS04. To supervise the quality of the design, operation and maintenance of water engineering.</p>
Resources for program implementation	
Staffing	<p>Support group: 1 Doctor of Science, Professor, 2 Ph.D., Associate Professors.</p> <p>Graduate Chair of Water Supply, Sewage and Water Treatment: 15 Academic staff employees, 2 of them (13%) are Doctors of Technical Science, Professors, 12 (80%) Ph.D. in Engineering Science.</p> <p>The Teachers who work their second job for UkrDNTEC «Energostal», public utility enterprises "Kharkivvodokanal". The Specialists involved in the cooperation with the PRODEKO-EŁK LLP (Republic of Poland), the public company "Ecopolymer Group".</p> <p>The clear majority of Academic staff involved in the implementation of the educational program have a scientific degree and / or academic title and are full-time employees of O.M. Beketov NUUE.</p> <p>All Academic staff have the confirmed level of scientific and professional activity. In order to improve the professional level, all Academic staff have to take internships, including foreign one every five years.</p>
Logistics	<p>Provision of training facilities, computer workstations, multimedia equipment meets the needs.</p> <p>All the necessary social and household infrastructure is available, the number of places in the hostels meets the requirements.</p> <p>The laboratories of the graduation department are equipped with multimedia installations, models, models, laboratory equipment for carrying out laboratory works:</p> <p>- Laboratory "Water purification technology " (128 m²): installation for determining the ionic composition of water, laboratory SSAA (surface-</p>

	<p>active agents), tetramer installation, pH meter, chromatograph, turbidity meter, oxygen meter, refractometer; Panasonic multimedia projector;</p> <ul style="list-style-type: none"> - Laboratory "Water supply and sewage" (78,8 m²): filters of various designs with natural and artificial loads, reactants activators, magnetic devices, vortex apparatus, bactericidal installation for water disinfection; - Laboratory of Engineering Hydraulics and Pumps (82,5 m²): laboratory stands "Parallel operation of surface electric pumps"; "Consistent operation of surface electric pumps"; "Operation of a surface electric pump in cavitation mode", "Determination of coefficients of hydraulic friction during movement in a pressure pipeline and determination of coefficients of local resistance", "Construction of a piezometric and pressure line for pressure movement of a fluid in a pipe of variable intersection, cross section" and leakage resistance through the hole and nozzles at constant pressure", layout of the main sewage pumping station.
Information and training support	<ul style="list-style-type: none"> – official site of the O.M. Beketov NUUE: http://kname.edu.ua/; – wireless internet access points; – unlimited access to the Internet; – scientific library, reading rooms; – Moodle virtual learning environment; – MS Office 365 suite; – corporate mail; – training and work plans; – schedules of the educational process; – educational-methodical complexes of disciplines; – educational and work programs of disciplines; – informational materials for independent and individual work of students in disciplines; – practice programs; – methodological instructions for the implementation of course projects (works), qualification work; – evaluation criteria for training level; – packages of complex control works
Academic mobility	
National Credit Mobility	In accordance with the Regulations on Academic Mobility of Students, Graduate Students, Doctoral Students, Research Teachers and Researchers of the O.M.Beketov NUUE
International credit mobility	The program develops prospects for participation and internships in research projects and academic mobility programs abroad.
Training of foreign higher education applicants.	In accordance with the Admission Regulations to the O.M.Beketov NUUE