MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

V. N. KARAZIN KHARKIV NATIONAL UNIVERSITY

CONFIRMED

Academic Council of

V. N. Karazin Kharkiv National University

“\_\_\_\_” \_\_\_\_\_\_\_\_\_\_\_\_\_ 20\_\_\_

protocol №\_\_\_

Entered into force from \_\_\_\_\_\_\_\_\_\_\_

by order of \_\_\_\_\_ 20\_\_ № \_\_\_\_\_\_\_\_\_\_\_\_

Vice-Rector for Research and Academic Affairs

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Name, SURNAME)

MICRO-SQUALIFICATION PROGRAM

**Integrated Water Resources Assessment and Management: Strategy, Methods and Tools**

(full name of the program)

NATIONAL QUALIFICATIONS FRAMEWORK LEVEL \_\_\_\_\_7\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(5, 6, 7, 8 level)

QUALIFICATION TYPE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_professional\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(educational or professional)

CATEGORY OF QUALIFICATION \_\_\_\_\_\_\_\_\_\_\_microqualification\_\_\_\_\_\_\_\_\_\_\_\_

(partial qualification or micro-qualification)

QUALIFICATION \_\_\_\_Water Resources Management Specialist \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(title of qualification)

**Kharkiv 2026**

**Program profile**

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| **1. General information** | | |
| **Head of the program** | | Alla Nekos, Doctor of Geographical Sciences, Professor, Professor of the Department of Environmental Monitoring and Nature Conservation. |
| **Members of the program development working group** | | Vitalii Bezsonny, Doctor of Technical Sciences, Associate Professor, Professor of the Department of Environmental Monitoring and Conservation Affairs. |
| **Full name of the higher education institution and structural unit where the program is implemented** | | V. N. Karazin Kharkiv National University, Institute of Environmental Sciences, Green Energy, and Sustainable Development, Department of Environmental Monitoring and Protected Areas Management. |
| **National Qualifications Framework Level** | | 7 (NQF Ukraine), Second cycle (QF-EHEA),  7 (EQF-LLL) |
| **Official name of the program** | | Integrated Water Resources Assessment and Management: Strategy, Methods and Tools |
| **Type of document issued and scope of the program in ECTS credits and academic hours** | | Certificate  3 ECTS credits , 90 hours |
| **Language(s) of teaching /assessment** | | Ukrainian, English / Ukrainian |
| **2. Program goal** | | |
| *Theoretical and practical training of a specialist who possesses modern knowledge and skills to solve practical problems in the field of integrated water resources management ( IWRM ), able to apply a systems approach, GIS technologies and modeling tools to ensure sustainable development within the framework of a green economy and during post-war reconstruction (for Ukraine).* | | |
| **3. Characteristics of the program** | | |
| **Orientation, features and objectives of the program** | | *The program has an applied orientation and is aimed at training specialists capable of solving practical problems in the field of IWRM . The objectives of the program are to provide students with modern knowledge and practical skills in assessing the state of aquatic ecosystems, using geographic information systems ( GIS ) and modeling tools for analysis and planning. The program provides for international participation in the development and teaching of the project Erasmus + « DOMANI – Developing Micro-Skills Ecosystems in Ukraine and Mongolia for a Competitive and Sustainable Green Economy »* |
| **The main focus of the program** | | *An integrated approach to water resources management at the basin level, strategic planning, legal regulation, and the application of modern tools for analysis and decision-making in the context of post-war reconstruction.*  *Keywords: integrated water resources management, basin principle, sustainable development, green economy.* |
| **5. Teaching and assessment** | | |
| **Teaching and learning** | | *main approaches: student-centered , activity-based, value-based; electronic, distance and self-learning;*  *– educational technologies: problem-based, interactive, informational-communicative, project-based .* |
| **Assessment** | | *A 100-point grading system is applied through a cumulative point-based assessment, including the following types of control: continuous assessment (written quizzes and surveys), intermediate control (defense of practical and independent assignments, participation in group discussion, and mid-term tests), final assessment (standardized testing).* |
| **6. Program competencies or job functions** | | |
| **General competencies** | GC01. Ability to learn and master modern knowledge.  GC02. Ability to make informed decisions. | |
| **Professional competencies** | PC1. The ability to apply new approaches to the analysis and prediction of complex phenomena, critical thinking about problems in professional activities.  PC2. Ability to prove knowledge and own conclusions to specialists and non-specialists.  PC3. Ability to self-educate and improve skills based on innovative approaches in the field of ecology, environmental protection, sustainable use of nature and water resources management.  IWRM principles to analyze and solve practical problems in the field of water resources management and environmental protection, apply national and international water legislation to regulate water relations and solve transboundary problems.  PC06. Ability to use modern methods and tools, including GIS and modeling, to collect, analyze, and visualize data on the state of water resources. | |
| **DOMANI - competences** | DC1. Addressing multidimensional sustainable development challenges by integrating approaches from different fields, forecasting trends, and adapting strategies to changing conditions.  DC2. Developing scenarios, forming a vision of the desired future, and creating innovative solutions for sustainable transformations.  DC3. Working productively in diverse teams, resolving conflicts constructively, and maintaining focus on shared goals.  DC4. Monitoring water quality and hydrology, developing water-efficient solutions, protecting coastal and wetland systems through integrated basin management. | |
| **7. Program learning outcomes** | | |
| **Program learning outcomes** | PLO 1. Be able to use modern information resources on issues of ecology, nature management, environmental protection, and water resources management.  PLO 2. Apply the conceptual framework of IWRM and sustainable development principles to analyze contemporary water problems.  PLO 3. Critically evaluate theories, principles, methods, and concepts from various subject areas to solve practical tasks and problems in ecology and water resources.  PLO 4. Know the provisions and requirements of legislative and regulatory documents at the international and national levels in the field of water resources management.  PLO 5. Use GIS technologies, modeling methods, and indicator systems to assess the state of aquatic ecosystems and the effectiveness of their management. | |
| **DOMANI - program learning outcomes** | DPLO 1. Objectively analyze situations, identify value creation opportunities, and formulate strategies that combine impact, feasibility, and ethics.  DPLO 2. Clearly formulate problems, identify key actors and relationships, and identify levers for systemic change.  DPLO 3. Form a vision of the desired future, generate and test solution ideas, and identify intervention points with the greatest impact.  DPLO 4. Work effectively in a team, resolve conflicts constructively , and maintain consistency regarding common goals. | |
| **8. Resource provision for program implementation** | | |
| **Human resources** | Lecturers have a scientific degree and/or academic title, including doctors of geographical sciences, doctors of philosophy. All lecturers are full-time employees of V. N. Karazin KhNU, who regularly undergo advanced training. Specialists in the field of water resources use are involved in the educational process | |
| **Logistics and technical support** | Equipment and facilities necessary for laboratory and field research, technical training aids (multimedia projectors, laptops, printers; scanners, personal computers with software) for the formation of subject competencies in the learning process; use of bases for conducting educational and practical classes in national parks and other facilities of the National Parks (under cooperation agreements). | |
| **Information and educational and methodological support** | Information regarding the micro-credential program is available on the official websites of V. N. Karazin Kharkiv National University (<https://karazin.ua/>), the Karazin Digital Learning Support Center (<http://moodle.karazin.ua>), and the Institute of Environmental Sciences, Green Energy, and Sustainable Development (<http://ecology.karazin.ua>). | |

**Table 2**

**2. List of program components**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course/ Code** | **Program Components (сourses, topics, assignments, practical component, assessment)** | **Number of ECTS Credits** **/ Hours** | **Type of Control** |
| EC. 1 | Fundamentals and principles of integrated water resources management | 0.5/ 15 | Test |
| EC. 2 | Strategic planning and institutional and legal support for IWRM | 0.5/ 15 | Test |
| EC. 3 | IWRM implementation practices | 1 /30 | Test |
| PС. 1 | *Practical Component* | 1/30 | Pass/Fail with Grade |
| FА. 1 | *Final Assessment Exam* |  | Test |
| **TOTAL SCOPE OF THE PROGRAM 3/90** | | | |

**3. Form of attestation according to the program**

The final assessment is conducted in the form of a final exam consisting of a comprehensive test, which includes both theoretical and practical questions..

**4. Program Certification**

Head of the program \_\_\_\_\_\_\_\_\_\_\_\_\_ Alla NEKOS

(signature) (Name, SURNAME)

Considered at the department meeting \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

from «\_\_\_» \_\_\_\_\_\_ 20\_\_ , protocol № \_\_\_

Head of the Department \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Nadiya MASKYMENKO

(signature) (Name, SURNAME)

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