TRAINING COURSE "*MANAGEMENT OF INTERNATIONALISATION AND GERMAN-UKRAINIAN ACADEMIC COOPERATION 2024*"

PROJECT CHARTER

1. University:

Admiral Makarov National University of Shipbuilding (NUoS)

2. Name and position of the project manager (course participant):

Ganna Trokhymenko	Head of Ecology and Environmental Technologies Department
Name	Position

3. General information on the project

3.1 Title of the project:

Mykolaiv Water Hub (MWH)

3.2. Description and scope of the project (please update if relevant):

Water is a fundamental and irreplaceable resource for life on Earth. Accordingly, it plays a pivotal role in the Sustainable Development Goals by securing societal and environmental well-being. At the same time, freshwater as a resource and related water infrastructure are among the most vulnerable sectors during armed conflicts. This has led to increased attention to both the role of water as a driver of conflicts and the impacts of armed conflicts on water and water systems.

As a result of the armed conflict, multiple Ukrainian communities have been left without wastewater treatment, resulting in pollution of surface waters. In Mykolayiv, the population was left without a centralized water supply for more than a month, and water supplied with interruptions from an alternative source later had excessive concentrations of chlorides, sulfates and other mineral salts even after treatment. Subsequently, the supply of salty estuary water to the water supply system, instead of fresh Dnipro water, led to the destruction of the system. At the moment, the city's population has only technical water.

Therefore, water treatment, search for alternative sources of water supply, monitoring of surface water and development of the latest energy-saving water treatment technologies are among the city's main problems.

The main idea of the project is to create an innovative laboratory complex that will allow scientists and employees of water utilities, students and schoolchildren, teachers and postgraduate students to collaborate, implement their ideas, learn new methods of water treatment, introduce new technologies for water treatment and environmental monitoring, and develop new irrigation systems for agriculture in the hot south of Ukraine. As part of internationalisation, we plan to establish links with foreign partners, search for new technologies, and train students and teachers in the basics of these technologies.

3.3. Project relevance (please update if relevant):

The Ukrainian South is playing a major role in the food security of the whole world and in the same time suffered immense damages to its critical water infrastructure, as well as loss of its human capital during the ongoing Russian war against Ukraine.

Water, energy and agrifood infrastructure facilities are facing horrific challenges. Russian aggression targeting Ukraine's vital infrastructure, aggravated by climate change, are pushing the Ukrainian South to look for new solutions for water and energy supply as well as for human capital development.

Mykolaiv has been without water since the beginning of the war due to the destruction of infrastructure. Today, the main problem in the city is the lack of drinking water. Creation of a water hub in Mykolaiv is one of the steps towards finding alternative ways of water supply, water purification, interaction of academic staff, students, schoolchildren, business, community partners, linking science, education and business, transfer of technologies from laboratories to production.

3.4. Project goals:

The strategic goal is to create a scientific and practical network between Ukrainian and German partners, both students and scientists, for further cooperation in ensuring the sustainable development of the water sector in southern Ukraine.

The aim of the project is to update and internationalise the curriculum of environmental students, improve the level of students' knowledge in the field of water technology and water management in accordance with modern European technologies.

Tasks:

1. Analysis of the curricula of German universities and our university in terms of implementing water management and modern water treatment technologies.

2. Preparation of a list of the main activities of the water hub, the necessary laboratory equipment, devices and tools for the functioning of the laboratory complex. Study the role of future graduates in this project and the necessary skills for their further activities in the field of water conservation and restoration.

3. Creation for students of NUoS curriculum module about modern saving water technologies and treatment processes.

3.5 Which are you expecting to be your deliverables (tangible results)?

- Holding a conference with all stakeholders from Ukraine and Germany.
- Establishing links with universities in southern Ukraine and German companies to continue the work on creating a water hub and working in the laboratory centre after the meeting in Germany.
- Create a list of necessary instrumental laboratory equipment.
- Create a module of the discipline on modern methods of water treatment for students to train future specialists for the laboratories of the Mykolaiv Water Hub.

4. Stakeholders

Manage closely: top management of the University, head of Ecology and Environmental Technologies Department, Partners from Germany (project curators)

Keep informed: employees of local authorities, self-governance bodies public institutions, businesses

Keep satisfied: heads of local authorities, self-governance bodies and public institutions, owners of businesses (other social and professional segments – the so called service customers)

Monitor (minimum effort): lecturers and tutors of the NUoS

5. Resources: Budget and Cost/Benefit

	Available	Not available
Financial resources		+ On this stage of the project
Human resources	+ (from 3 to 7 depending on the number of participating partners)	
IT resources	+ (available at the NUoS)	
Marketing resources	+ (advertising, dissemination of information for participation in potential research and for possible researchers)	
Others	+ Knowledge, tools, technology and everything that can be attributed to a company's intellectual resource.	

6. Challenges/ Risks

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Possible Risks	Likelihood	Mitigation
Approaching the front line due to changes in the map of hostilities	Not very likely	Relocation of equipment to a safer area
Staff shortage	Likely	Staff training at the university, professional development of existing staff
Decreased motivation of students and teachers to participate in the project	Likely	Explanation of project perspectives

Low interest of foreign investors	Not very likely	Advertising and the possibility of startups implementation

7. Major activities: Time planning

7.1 Milestones:

1. DISSEMINATION OF INFORMATION ABOUT THE PROJECT WITHIN THE STAKEHOLDERS' TARGET GROUPS. IDENTIFICATION OF ALL POSSIBLE PROJECT PARTICIPANTS AND PARTNERS.
2. COMPARATIVE ANALYSIS OF CURRICULA FOR STUDENTS IN THE FIELD OF ENVIRONMENTAL PROTECTION, IN PARTICULAR, WATER RESOURCES AND WATER MANAGEMENT.
3. CREATE A LIST OF NECESSARY INSTRUMENTAL LABORATORY EQUIPMENT
4. DEVELOPING AN ACADEMIC DISCIPLINE MODULE AND INTEGRATING IT INTO THE TRAINING PROGRAMME

7.2 Further Activities (breakdown to achieve milestones)

Milestone 1
DISSEMINATION OF INFORMATION ABOUT THE PROJECT WITHIN THE STAKEHOLDERS' TARGET GROUPS. IDENTIFICATION OF ALL POSSIBLE PROJECT PARTICIPANTS AND PARTNERS.

Activity	*Stakeholders involved*	*Timeline*	*Expected outcomes of this activity*
Holding a meeting-conference in Germany with potential project partners	University representatives, Mayor of the city of Mykolaiv, representatives of business, banking sector, directors of water utilities	February 2024	Identify a list of goals and priorities, potential investors and project participants

Meeting with representatives of the university top management	Rector and vice-rectors of the university, heads of departments, representatives of the Department of Ecology and Environmental Technologies	Murch 2024	Determination of the role of the university in the project and the main tasks of NUoS
Dissemination of information about the project	PR department of German partners and university	February – April 2024	advertising on websites and social networks
Milestone 2 2. COMPARATIVE ANALYSIS OF CURRICULA FOR STUDENTS IN THE FIELD OF ENVIRONMENTAL PROTECTION, IN PARTICULAR, WATER RESOURCES AND WATER MANAGEMENT.			
Activity Analysis of the website of LEIBNIZ UNIVERSITY HANNOVER and the Technical University of Berlin	Academic personnel	*Timeline* June 2024	*Expected outcomes of this activity* Identification of environmental-related majors for further curriculum analysis
Conducting a comparative analysis of the curricula of environmental specialities of universities in Germany and Ukraine, in particular, NUoS	Academic personnel	June 2024	Identify the main disciplines related to water resources, water quality assessment and water management
Milestone 3 CREATE A LIST OF NECESSARY INSTRUMENTAL LABORATORY EQUIPMENT			
Activity Discussions with representatives of the German side on the financial limit for equipment	*Stakeholders involved* Academic personnel and representatives of business	*Timeline* April-May 2024	*Expected outcomes of this activity* Allocated budget for equipment
Meeting with representatives of water utilities and universities on the necessary research for them	Academic personnel, representatives of business, banking sector, directors of water utilities	May-June 2024	Establishment of key research themes
Selection of equipment based on research areas and budget	Academic personnel, banking sector, representatives of water utilities	July 2024	List of equipment
Milestone 4 DEVELOPING AN ACADEMIC DISCIPLINE MODULE AND INTEGRATING IT INTO THE TRAINING PROGRAMME			

Activity Holding an open meeting of the graduating department	*Stakeholders involved* Academic personnel (lecturers and tutors of English), course participants	*Timeline* June 2024	*Expected outcomes of this activity* Selecting a discipline to develop a new module. Selection of teachers and necessary topics in accordance with the objectives of the laboratory centre.
Module development	Academic personnel (lecturers and tutors of English), course participants	June-July 2024	Creating a module plan, lectures and practicals for the module.
Holding an open meeting of the graduating department	Academic personnel (lecturers and tutors of German), course participants	August 2024	Approval of the module and work programme of the discipline

8. Evaluation and Monitoring

Key criteria for project evaluation may include: 1) compliance of the list of equipment with the budget; 2) number of lectures developed and their thematic diversity; 3) number of students who will study this subject with the module of innovations in water treatment, as well as subsequent graduates involved in the project.

The success of the project can be confirmed by: 1) positive feedback from all categories of stakeholders; 2) their dissemination of positive feedback about the project to other potential stakeholders; 3) the number of investors

Unexpected results can be both positive and negative.

For example, an increase in the budget, or vice versa, an increase in inflation.

Also, the lack of desire among graduates to work in the industry in the future.

Or, on the contrary, the number of people willing to work in the laboratory exceeds the number of available jobs.

Lack of the required number of supervisors.

The inability to further implement the results of the project hardware due to military operations.

9. Outlook and Sustainability

Changes to the curriculum in line with current European trends in water protection will enhance the possibility of student mobility, as well as the ability of future specialists to improve their skills at German water companies, and create a Water Hub that will meet international quality standards in the future.

This project is one of the stages of creating an innovative laboratory centre in Mykolaiv. Further prospects for conducting laboratory work of students

on the basis of this centre, scientific work of students and postgraduates, preparation of schoolchildren for scientific work competitions, training of specialists in the field of water use and inspection of water resources, as well as raising the level of qualification of already working professionals in this field. It can also be a centre for youth start-ups.