Attachment 1 - PhD Course Description

(Attachment 1 to the Call for Applications for Admission to the **PhD in Sustainable Blue Economy and One Health, Cycle XL – A.Y. 2024/2025)**

PhD Program	**Sustainable Blue Economy and One Health**
Coordinator	Prof. **Michelina Venditti** email: dottorato40@unidav.it
Course duration	3 years - Course start date: **01/11/2024**
Research Areas	01; 02; 05; 06; 09; 10; 11; 12; 13; 14
Relevant Scientific Disciplinary Sectors (SSDs)	ING-INF/05; ING-IND/11; INF/01; IUS/01; IUS/10; IUS/13; FIS/06; M-PED/02; SECS-P/07; SECS-P/01; SECS-P/06; L-ANT/02; MED/36; MED/28; MED/44; MED/03; BIO/14; BIO/15; BIO/12; SPS/10
PhD Program Website	***https://www.unidav.it/index.php/dottorato-di-ricerca-40-ciclo/*** According to the law, only the Italian language version of this form shall be deemed effective
Description	The PhD in Sustainable Blue Economy and One Health focuses on advanced third-level training in the field of "Sustainable Blue Economy"—an emerging sector encompassing both established and innovative aspects of the marine economy. This aligns with the European Green Deal and the need to adapt economic development to sustainability criteria consistent with the United Nations Sustainable Development Goals (SDGs). The course integrates the One Health approach, recognizing the close link between human, animal, and environmental health to enhance the well-being of marine ecosystems, species, and the communities dependent on them. This PhD program is characterized by an interdisciplinary and transdisciplinary approach, promoting cross-sectoral collaboration. It aims to provide PhD candidates with specific and transversal skills through rigorous methodological training, enabling them to develop innovative research projects and formulate hypotheses and practical solutions that reconcile societal, economic, and marine environmental needs. Key topics include, but are not limited to: - New business models, production, consumption, evaluation and impact, environmental accounting, cost accounting, and sustainability reporting; - Marine renewable energies, technologies, economic development models, and socio-economic effects of utilizing marine renewable energies; - Scientific, social, economic, and legal aspects of marine protection; - Ecological restoration of seabeds, in line with the UN Decade for Ecosystem Restoration 2021-2030, the European Green Deal, and the PNRR, focusing on remediation and restoration of marine ecosystems; - Digital twin technology for marine economy sustainability; - Interconnection between environmental health and lifestyle. The educational offering includes an inclusive, integrated, and interactive teaching methodology, with both theoretical and practical lessons (workshops, project work, simulations, internships), fostering constant synergy and collaboration with local communities, public institutions, and private companies. There are also periods of training and research abroad and educational meetings with sector experts (including international ones).

	Upon completion of the program, PhD graduates will use their methodological, theoretical, and practical background to critically interpret the state of the art in their research field, address open problems, and contribute to advancing knowledge in line with international agendas and the UN Agenda 2030 for Sustainable Development, particularly SDGs 14 (Life Below Water), 13 (Climate Action), 3 (Good Health and Well-being), 7 (Affordable and Clean Energy), 4 (Quality Education), 6 (Clean Water and Sanitation), 9 (Industry, Innovation, and Infrastructure), 12 (Responsible Consumption and Production). To stimulate students' research and proposal skills, aimed at identifying new research lines or applications, demonstrating feasibility, and evaluating impact according to the "Do no Significant Harm" (DNSH) principle and in light of significant constitutional changes (articles 9 and 41) of February 2022, the PhD provides in-depth studies on specific research and application areas of interest to the student, emphasizing the interconnection between environmental, economic, management, legal, and health aspects. The PhD program is established through a specific agreement between the Leonardo da Vinci Telematic University and the University of G. d'Annunzio of Chieti-Pescara, under which PhD students will also have access to research and teaching services and facilities from the University of G. d'Annunzio.
Available Positions	**n. 9 positions, including:**
	2 positions without a scholarship;
	1 position with a scholarship funded by UNIDAV, pursuant to D.M. 629/2024, under PNRR M4C1, Investment 4.1, sub-investment "PNRR Research" - General PhDs
	1 position with a scholarship funded by the University of G. d'Annunzio, pursuant to D.M. 629/2024, under PNRR M4C1, Investment 4.1, sub-investment "Public Administration"
	1 position with a scholarship funded by the University of G. d'Annunzio, using its own university funds;
	4 positions with scholarships funded by UNIDAV, pursuant to D.M. 630/2024, under PNRR M4C2, Investment 3.3 "Introduction of innovative PhDs that meet the innovation needs of companies and promote the hiring of researchers by companies". (details in the following box)
Theme-bound positions and details on their related research projects	**CANTIERI ITALIANI S.R.L.:** **Project Title:** The Use of AI in Photovoltaic Production for the Green Transition of Ports and Promotion of the Blue Economy **Company Contact:** Ing. Marco Rana - Renewable Construction Division - Engineering and Connections Directorate **Research Project Objectives:** The PhD program will explore the integration of photovoltaic systems in port contexts, focusing on using AI for data analysis to continuously monitor system performance, detect anomalies, and plan maintenance. The green transition of port areas involves integrating renewable energy sources into the energy mix of infrastructure services and transportation. Real-time performance analysis of photovoltaic systems and predictive production estimates are fundamental for quantifying the energy mix. AI could play a crucial role in developing advanced control systems for intelligent management of port photovoltaic plants. Machine learning algorithms could provide optimal operating strategies to maximize production by dynamically adapting to weather and environmental pollution conditions. Another important aspect is developing accurate

forecasting models for short- and long-term energy production, integrating meteorological data, solar radiation models, and historical plant performance information. This would allow better planning of port operations and optimized energy flow management.

Project Alignment with PNRR Themes.

The project aligns with:

- Mission 1: Digitalization, innovation, competitiveness, culture, and tourism.
- Mission 2: Green revolution and ecological transition.
- Mission 3: Infrastructure for sustainable mobility.
- Mission 7: RePowerEU.

DIGITALPLATFORMS S.R.L.:

Project Title: Cyber Security and IoT: Development and Transition in the Context of Sustainable Blue Economy

Company Contact: Gen. Dr. Luigi Ciro de Lisi, Chairman of the Scientific Committee of DigitalPlatforms

Research Project Objectives:

The PhD scholarship co-financed by DigitalPlatforms focuses on "Cybersecurity & IoT: Development and Transition," involving research and training activities at Unidav locations, partner institutions (University of G. d'Annunzio), and DigitalPlatforms' headquarters for applied activities. The scientific goal is to investigate new tools for data security, balancing personal data protection and cybersecurity. Analytical models will be developed for risk management from technology misuse, prevention against data acquisition, misuse, and theft, and methodologies for creating value (the so-called Internet of Value). The ultimate goal is to study and establish data security systems for organizations operating in Blue Economy and One Health sectors, with attention to digital transition, marine environment protection, and tourism support.

Project Alignment with PNRR Themes.

The research project aligns with: Mission 1: Digitalization, innovation, competitiveness, culture, and tourism (specifically M2C2 and M2C3) and Mission 2: Green revolution and ecological transition (specifically M2C4).

CRESNOVA S.R.L.:

Project title: "Molecular biomarkers and interconnection between health and environment or lifestyle"

Company contact: Chiara Sammartino

Objectives of the Research Project.

The doctoral scholarship co-financed by the company ResNova S.r.l. is focused on the development of biomarkers. molecular to evaluate the interconnection between health and environment or lifestyle. Human health is systematically connected to a healthy, safe environment and correct lifestyles.

	Characterization of the human exposome and the development of innovative biomarkers are fundamental to pursue a plan to prevent the occurrence of transmissible and chronic-degenerative diseases at a population level. The objectives of the research project are: • study of epigenetic modifications related to the exposome • identification of genomic variants, molecular biomarkers with advanced technologies • increase the effectiveness of the prevention, diagnosis and treatment of diseases, taking into account individual differences in genetic heritage, lifestyles and environment, and provide professionals with the resources necessary to personalize interventions. **Consistency of the proposed project with the themes of the PNRR.** These themes are in line with the objectives of the European Green Deal shared by PNR 21 -27. Especially: - the "health" research area aimed at improving diagnostic capacity and the development of new technologies. Furthermore, the development of new diagnostic and therapeutic approaches and the identification of health risk factors linked to the environment and/or lifestyle ("HEALTH"; area (5.1) with articulation 1,5 and 7). _____ ***TERME ITALIA S.R.L.:*** **Project title:** "TALKING HEALTH" **Company contact:** Alessandra De Paola - Executive Special Projects – adepaola@termeitalia.it **Objectives of the Research Project** The key words of the SUBEOH Doctoral course are Sustainability, Wellbeing, Innovation and Interconnection / Integration; are also the main objectives of the TALKING HEALTH Doctoral project, which aims to develop innovative digital systems for the transmission and promotion of the culture of thermalism, i.e. the environmental, economic and digital sustainability of collective health and well-being opportunities deriving from the use of water thermal baths, which are an integral part of the natural cycle of terrestrial water. The requested PhD will have to establish an innovative ecosystem of communication to the population aimed at disseminating the culture of thermalism proposed by the companies of the Terme Italia group, of sustainable access to the natural resource adopted by them, and of promoting the holistic approach to health and to well-being that integrate natural resources and medical and scientific expertise. **Consistency of the proposed project with the themes of the PNRR** The project is consistent with the following missions of the PNRR: MISSION 1 – Digitalisation, Innovation, Culture and Tourism. The doctoral path is consistent with the aforementioned mission: the theme of digitalisation, as a necessary support for the acquisition and analysis of data, the articulation of adequate metrics and to guide changes and support decisions is present, in a transversal, in the various teaching activities.
Admission requirements	Please refer to the art. 2 of the competition notice

Foreign languages	Knowledge of the English language is required
Application	The application must be submitted online. The candidate must connect to the appropriate service on the page https://www.unidav.it/index.php/dottorato-di-ricerca-40-ciclo/ and follow the instructions referred to in the art. 4, paragraph 2 of the Notice. In the application for participation, candidates must indicate whether they also intend to compete for one or more places with a specific scholarship financed by Ministerial Decree 630, specifically indicating which(s) and attaching the relevant project(s).
Documentazione da allegare in formato pdf alla domanda online (max 5MB ogni allegato)	- CV *(European format)*, limited to educational and/or scientific and/or professional qualifications consistent with the topics of the doctorate (max 10,000 characters); - diploma *supplement* or self-certification of the grades of the exams taken during the course of study, as well as the degree grade; - research project(s) (max 10,000 characters). - any other relevant titles (scientific publications, awards, references or other)
Publication date of any pre-selection outcome	**12 august 2024**
Test methods and evaluation criteria	Following any pre-selection (art. 6 paragraph 4 of the Notice), the selection will take place through: - evaluation of CV and qualifications (30/100 points) - evaluation of the research project (40/100 points); - interview (30/100 points). The interview consists of (a) the discussion of qualifications; (b) in the discussion of the research project; (c) in assessing knowledge of the English language. Candidates who apply for one or more scholarships with a specific topic will undergo an additional interview on the research project relating to the specific topic. Candidates residing abroad who request to take the oral test remotely are contacted by email by the Commission to define the date and time of the interview. The minimum score to qualify is 60/100.
Schedule of exams	The oral tests are scheduled for 30 August 2024 at 9am at the University headquarters in Torrevecchia Teatina (CH), Piazza San Rocco, 2. The indications will be published in **https://www.unidav.it/index.php/dottorato-di-ricerca-40-ciclo/**