ANNEX No. 3

DOCTORAL (Ph.D.) COURSE IN:

"INNOVATIVE LIFESTYLE INTERVENTIONS FOR HEALTH PROMOTION"

CYCLE: XLI

Doctoral Course Coordinator: Prof. Giovanni Molica Bisci

Administrative Office: Department for the Promotion of Human Sciences and Quality of Life

Duration of the Course: 3 years

Total Number of Positions: 9
Positions with scholarships: 7
Positions without scholarships: 2

PROJECT DESCRIPTION:

The Doctoral Course "Innovative lifestyle interventions for health promotion" aims to provide integrated, interdisciplinary training aimed at acquiring the skills and knowledge necessary to carry out high-quality research activities in fields related to the two proposed curricula:

1) *Physical Activity and Nutrition (PAN)*

2) *Health Psychology and Science Communication (HPSC)*

Inadequate or insufficient physical activity (in terms of dose-response) and incorrect eating habits are the main modifiable risk factors for chronic non-communicable diseases development, accounting for about 60% of diseases in Europe and Italy, as defined by the Ministry of Health.

Recent studies show that individual-environment interactions, such as personalized physical exercise and proper nutrition, have a greater impact than genetic factors in determining, through epigenetic mechanisms, the response to disease and promoting an improvement in the quality of life.

However, physical activity and nutrition are aspects of human health that most of the population is not sufficiently aware of, especially in terms of preventive measures. Moreover, the new and broader concept of "food quality" goes beyond mere concept of food safety to promote new lifestyles and consumption patterns. Certification of product and process quality, in various forms, become essential tools in this new scenario.

Risk factors such as poor nutrition and physical inactivity are preventable and require a multidisciplinary approach with a wide range of coordinated interventions at different levels. Such an approach requires the training of new professionals capable of promoting and disseminating the concept of a healthy lifestyle for healthy individuals and offering interventions to prevent the onset of diseases in individuals exposed to risk factors. For individuals with health conditions, professional skills focused on defining an integrated and transversal strategy in collaboration with social and healthcare services and local stakeholders are even more essential. These interventions aim to slow

down the progression of the disease, including the behavioral and nutritional aspects, to optimize the response to pharmacological therapy.

The PAN curriculum aims to train professionals with the latest scientific knowledge and technological advancements capable of improving the quality of life through a proper lifestyle. It includes a training pathway structured along several main thematic areas, such as:

i) the study of non-communicable chronic diseases with a high impact on healthcare and social welfare systems, covering aspects related both to the molecular mechanisms associated with the development of such diseases (with particular reference to the interactions between individual genetic predisposition factors and lifestyle factors) and to prevention and treatment strategies;

ii) the application of a multidisciplinary approach, in classical and/or translational experimental models, to understand the mechanisms through which nutrition and physical activity can delay and reduce the onset of diseases;

iii) the adoption of advanced technologies for identifying new functional parameters, in order to more accurately determine the levels of interaction of different diseases with motor output and the basis for increasingly personalized medicine.

The HPSC curriculum aims to train researchers capable of operating within the main thematic areas of Health Psychology, such as:

i) analyzing psychosocial phenomena as an emergent product of social, discursive, and material interaction among social actors, situated within specific communities of practice and activity systems (such as healthcare organizations, companies, work groups, educational contexts, sports groups);

ii) understanding the psychological processes and intrapsychic and cultural dynamics that organize individual interaction with different reference contexts - healthcare, political, economic, intercultural, and organizational;

iii) developing and applying research methodologies aimed at modeling and developing interaction processes between users and structures dedicated to health promotion from a perspective of primary prevention, promotion of healthy lifestyles, and implementation of effective and efficient interaction and communication models.

COURSE OBJECTIVES:

The course is aimed at training researchers capable of conceiving, designing, implementing, and adapting research programs with applications and implications in the field of health, in accordance with Cluster 1 (HEALTH) of Horizon Europe.
The central theme of the Doctorate transcends multiple disciplines and methodologies included in various sectors and scientific areas, aggregated in a training program that includes common/transversal objectives and specific objectives for the two curricula.
The common objectives include:

- an advanced and rigorous training in methodologies for analyzing quantitative and qualitative data.
- the ability to collaborate with various disciplinary and technical fields traditionally linked to the research interests of health and clinical psychology.
- the ability to establish connections with public and private sectors for disseminating research outcomes.

- the possibility to acquire competencies and adequate knowledge of legislation protecting the treatment of personal data and human health.

Concerning the specific objectives, in the Physical Activity and Nutrition (PAN) curriculum, students will be mentored by international experts in different research fields related to nutrition and motor sciences. Through continuous tutoring, the Ph.D. students will become independent in their research activities, and able to design, and implement decisive and innovative intervention programs to improve people's quality of life by changing their habits.

The training objectives of the PAN curriculum will include advanced knowledge in the biomedical/clinical and technological domains through:
- understanding the mechanisms through which physical activity can influence health and reduce risk factors for chronic non-communicable diseases with a high impact on healthcare and social assistance systems.
- creating new tools and applying advanced technologies to personalize physical exercise adapted to the functional recovery of individuals of different age groups and physical conditions.
- defining methods for evaluating alterations in nutritional status (malnutrition due to excess or deficiency).
- acquiring knowledge of product and process quality certification tools in the agri-food system.
- developing innovative nutritional treatments to improve the clinical management of patients from the perspective of personalized and precision medicine.
- understanding technological and informatics processes useful for the development and application of functional and biomechanical evaluation tools for human performance.

Competencies in machine learning and the organization of customized environments through augmented immersive and mixed reality in the context of bioengineering applied to human movement will also be developed.
The Doctoral curriculum in HPSC aims to provide advanced training for researchers who can work in various thematic areas of Health Psychology.
Specific objectives include:
- studying the interactions between society, nutrition, physical activity, and lifestyles to analyze the media's ability to promote the development of new communication strategies, also through new digital channels and social networks, aimed at promoting a healthy and sustainable lifestyle.
- understanding different theoretical and epistemological paradigms of the research in the field of Health and Clinical Psychology.
- acquiring methodological skills in terms of planning investigations operationally consistent with the adopted theoretical and epistemological paradigms.

The training objectives of the Doctorate courses also include acquiring skills related to research project design and management, presentation and discussion of results, writing reports and scientific publications, as well as an in-depth understanding of intellectual property issues.

The enhancement and dissemination of research results will be guaranteed according to the principles of Open Science and FAIR Data, making research more transparent and promoting collaboration among researchers. These principles facilitate data reuse and future sharing, meet the requirements of funding bodies (Funders' data policies), and increase the visibility and impact of public investments. Dissemination of research products will be encouraged according to a knowledge circulation model that uses two channels to make digital content available according to the standards of open access: self-archiving in open archives and publication in open-access journals.

JOB OPPORTUNITIES:

The Doctoral course in Innovative lifestyle interventions for health promotion aims to train professionals capable of working across various sectors, including nutrition, human nutrition,

movement, and life sciences, with a multidisciplinary set of knowledge and skills ranging from biomedical and biomechanical to psychological, legal, and economic-commercial fields.

The acquired competencies will enable the Ph.D. to pursue an academic career at universities and research institutes, both public and private, operating at national and international levels. Moreover, opportunities will be available in companies, public administration, specialized institutions, including those operating in the social areas of research, where advanced knowledge and skills in human nutrition, quality of agri-food products, and related certifications (product and process), physical activity, health communication, and the protection of the right to health and personal data treatment are required.

Scientific Research areas of reference: BIOS-06/A; BIOS-07/A; BIOS-09/A; BIOS-10/A; BIOS-11/A; MEDS-02/A; MEDS-03/A; MEDS-05/A; MEDS-08/A; MEDS-12/A; MEDS-24/B; IBIO-01/A; PSIC-02/A; PSIC-04/A; ECON-10/A; GIUR-01/A; GSPS-06/A; MEDF-01/A; MEDF-01/B.

CONTEST POSITIONS AND RESEARCH PROJECTS THEMES:

The candidate must specify in the application the type of scholarship/doctoral position to which he or she would prefer to apply within a specific PAN or HPSC curriculum. It is specified that the research activities to be carried out by the doctoral student will cover fields of research related to the chosen curricula as indicated in the tables below.

As regards the research project drawn up by the candidate, and which will be evaluated at the selection stage for access to the doctoral course, it should be consistent with the main themes of the doctoral course and the chosen curriculum.

The candidate should refer to Annex "D" for drafting the research project.

Positions	**Doctoral scholarships financed by the** **TELEMATICS UNIVERSITY PEGASO** **(Curriculum Health Psychology and Science Communication - HPSC)**	**no.2**	**Research Topic 1_HPSC:** 'Health psychology: prevention, health communication, therapeutic adherence' **Research Topic 2_HPSC:** 'Health psychology: psycho-educational interventions to promote a proper lifestyle'

Positions	**Doctoral scholarships financed by the** **TELEMATICS UNIVERSITY "SAN RAFFAELE ROMA"** **And** **"UNIVERSITAS MERCATORUM"** **(Curriculum "Physical Activity and Nutrition" - PAN)**	**no.4**	**Research Topic 1_PAN:** 'Research methods, statistics and data management'
			Research Topic 2_PAN: 'Privacy and artificial intelligence'
			Research Topic 3_PAN: 'The Impact of Physical Activity and Nutrition on Non-Communicable Chronic Diseases: Molecular and Cellular Mechanisms'
			Research Topic 4_PAN: 'Human Nutrition Science and Quality Promotion in Agrifood Chains'
			Research Topic 5_PAN: 'Bioengineering of human movement'
			Research Topic 6_PAN: 'Functional Assessment and Performance Analysis'
			Research Topic 7_PAN: 'Role of Physical Exercise in Disease Prevention and Enhancing Quality of Life'

Position	**Doctoral scholarships financed by the** **NATIONAL AGENCY FOR CYBERSECURITY (ACN)** **(Curriculum Physical Activity and Nutrition - PAN)**	**no.1**	**Research Topic_PAN:** 'Cybersecurity and responsibility in personalised medicine'

Positions	**Without scholarships** **(Curricula HPSC e PAN)**	**no.2**	**Research Topic 1_HPSC:** 'Health psychology: prevention, health communication, therapeutic adherence' **Research Topic 2_HPSC:** 'Health psychology: psycho-educational interventions to promote a proper lifestyle'
			Research Topic 1_PAN: 'Research methods, statistics and data management'
			Research Topic 2_PAN: 'Privacy and artificial intelligence'
			Research Topic 3_PAN: 'The Impact of Physical Activity and Nutrition on Non-Communicable Chronic Diseases: Molecular and Cellular Mechanisms'
			Research Topic 4_PAN: 'Human Nutrition Science and Quality Promotion in Agrifood Chains'
			Research Topic 5_PAN: 'Bioengineering of human movement'
			Research Topic 6_PAN: 'Functional Assessment and Performance Analysis'
			Research Topic 7_PAN: 'Role of Physical Exercise in Disease Prevention and Enhancing Quality of Life'

Rome, July 22nd, 2025

COORDINATOR'S SIGNATURE

Prof. Giovanni Molica Bisci