



Università
degli Studi
di Ferrara



PhD Programme

in

Environmental Sustainability

and

Wellbeing

Istituto Universitario di

Studi Superiori IUSS – Ferrara 1391



The innovative PhD in *Environmental Sustainability and Wellbeing* is interdisciplinary, intersectoral and international. Sustainability has been studied with diverse methods in various disciplines. The objective of this PhD programme is to train researchers who, starting from their specific background, will acquire interdisciplinary and integrated methodologies to manage the sustainability of the environment in relation to the wellbeing of living organisms.

<http://www.unife.it/studenti/dottorato/it/corsi/riforma/environmental-sustainability-and-wellbeing>

The training is based on the synergy of three main macro-areas:

1. The humanities and social sciences;
2. economics and law;
3. ecology, biology, and chemistry.

Socio-humanistic competences aimed at developing cultures of sustainability and the conservation of cultural heritage will be acquired by exploring Ecocriticism, Green Cultural Studies, Heritage Studies, the concepts of Anthropocene, Planetary Boundaries, Circles of Social Life, indicators such as Ecological Footprints and the principles for the energetic and environmental management of the built environment. Competences in environmental economics, econometrics and law will be developed by studying green, circular, and sharing economy applied to productive systems, heritage, and local development. Competences in ecology, biology, and chemistry will be acquired by focusing on ecological and genetic diversity and the evolutionary potential of species as well as on the assessment, monitoring, and mitigation of effects caused by anthropogenic activities and climate-changing, toxic substances. By placing sustainable environment and wellbeing in a perspective of biological and cultural complexity, a new generation of researchers will possess the skills to manage resources, productive activities and heritage in fragile ecosystems and to improve the quality of life and health.

These skills will be appreciated in traditional and innovative sectors, at national and international level:

1. State, regional, local institutions in charge of the management and valorisation of the territory, biodiversity, cultural heritage; archaeological museums, parks, and zoos; research institutes such as ISPRA, EEA; non-profit organisms and NGOs such as WWF, Greenpeace, OIE, FAO, FWW, Oxfam; health agencies such as OMS, ECDC, OCSE; development agencies such as UNDP, UNIDO, UNEP, World Bank;
2. Industries, enterprises and law firms specialized in the management of renewable resources and building materials; reuse of secondary raw materials and reduction of processing wastes; reuse of consumer goods;
3. Agri-environmental sector, with reference to the assessment and prevention of administrative offences and environmental crimes;
4. Research centres and laboratories for the prevention of disease and promotion of health and psycho-physical wellbeing. Interdisciplinary and integrated skills acquired during the PhD programme can be employed in numerous professions, such as: researcher, teacher, populariser of cultures of sustainability and wellbeing from a holistic perspective; manager of sustainable firms, museums, and archaeological sites; policy maker and legal expert in green, circular and sharing economy; energy manager; production manager; environmental and forensic toxicologist; certifier of sustainable and biological agriculture.

Activities include research collaborations with national and international institutions:

Western Sydney University - WSU; Istituto Superiore per la Protezione e la Ricerca Ambientale - ISPRA; Fondazione Edmund Mach - FEM; TECNALIA Research and Innovation; Centre for the Humanities and Health - CHH, King's College London; Katholieke Universiteit Leuven; Pontificia Universidade Católica de Chile, Santiago and Villarrica - PUC; Pontificia Universidade Católica do Paraná, Curitiba, Brazil - PUCPR.



Research on theories, policies, and good practices of sustainability is at the core of the Joint PhD with WSU. UniFe and WSU work within the *Routes towards Sustainability* University Network, founded in 2012, coordinated by UniFe and formed by universities from all continents, working together to promote innovative research and teaching on environmental economic, social and cultural sustainability. Paul James, Professor of Globalization and Cultural Diversity, is the Coordinator of the PhD in Sustainability and Director of the Institute for Culture and Society - ICS, <https://www.westernsydney.edu.au/ics>, internationally renowned for interdisciplinary and innovative research on environmental crises, global civilization, technological transformations, economic instability, geopolitical changes, transnational mobility and urbanization. <https://www.routesnetwork.net/>

The ICS, with its series of seminars and annual Knowledge/Culture symposia attracting world-renowned scholars, provides an excellent research environment.

The Istituto Superiore per la Protezione e la Ricerca Ambientale – ISPRA (Italian Institute for Environmental Protection and Research) takes part in the programme by providing scientific, technological, cultural methods and tools to monitor sources and factors of pollution, enhance health care, acquire skills in environmental law and economy.

The Fondazione Edmund Mach – FEM provides opportunities for conducting research in labs specialised in the characterization of genomic diversity and interacting with experts in molecular ecology, sustainable ecosystems and food quality.

TECNALIA Research and Innovation, based in Bilbao and Valencia, is a member of the *Green.eu* Horizon 2020 project and *Inno4sd.net - Innovation for Sustainable Development Network*, www.inno4sd.net, managed by the Department of Economics and Management. The facilities in Spain will be available for students who want to investigate green and circular economy as well as the design and analysis of environmental innovations in regional contexts.

Collaboration with the Centre for the Humanities and Health – CHH directed by Prof. Brian Hurwitz at King's College London started in 2006 within the *Interfacing Science, Literature and the Humanities* Socrates-Erasmus European Thematic Network. Students will have the opportunity to spend research periods at CHH, which over the years has become globally recognised in the Medical Humanities.

Katholieke Universiteit Leuven hosts the research group on *Consumer Protection in a Circular Economy*, coordinated by Prof. Evelyne Terryn and formed by economists, engineers, philosophers and lawyers. With them students will be able to acquire interdisciplinary knowledge on circular economy in productive processes and the use of resources.

Collaboration with Pontificia Universidade Católica de Chile in Santiago and Villarrica - PUC and Pontificia Universidade Católica do Paraná, Curitiba, Brazil – PUCPR began in 2012 with the foundation of the *Routes towards Sustainability* University Network. Students will be able to contribute to research teams working on local and regional sustainability at PUC and sustainable architecture and design at PUCPR.

Research topics:

The central theme is sustainability as a complex system based on the interdependence between natural and anthropic ecosystems and the material and immaterial wellbeing of the organisms that live in it. Environmental sustainability and wellbeing bring together the humanities and social sciences, economics, law; biology, chemistry, medicine, urban planning, engineering. The synergy of the sectors will support innovative; methodologies aimed at developing the cultural and scientific competences needed to understand that the management and renewal of natural resources and cultural heritage are deeply connected with the quality of life and promotion of health.

The sustainability of the environment related to wellbeing presupposes a complex thematic articulation that encompasses various ERC sectors:

Social Sciences and Humanities

SH1 Individuals, Institutions and Markets: Economics, finance and management



SH2 Institutions, Values, Beliefs and Behaviour: Sociology, social anthropology, political science, law, communication, social studies of science and technology

SH3 Environment, Space and Population: Environmental studies, geography, demography, migration, regional and urban studies

SH4 The Human Mind and Its Complexity: Cognitive science, psychology, linguistics, education

SH5 Cultures and Cultural Production: Literature and philosophy, visual and performing arts, music, cultural and comparative studies

SH6 The Study of the Human Past: Archaeology, history and memory

Physical Sciences and Engineering

PE4 Physical and Analytical Chemical Sciences: Analytical chemistry, chemical theory, physical chemistry/chemical physics

PE8 Products and Processes Engineering: Product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE10 Earth System Science: Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

Life Sciences

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology disorder)

LS6 Immunity and Infection: The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection

LS7 Diagnostic Tools, Therapies and Public Health: Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

LS8 Evolutionary, Population and Environmental Biology: Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, microbial ecology

Duration: 3 years

Admission: academic qualifications and interview

Coordinator: Prof. Paola Spinozzi

Head office: Ferrara

Internationalisation: an agreement between Università di Ferrara and **WESTERN SYDNEY UNIVERSITY - WSU (Australia)** is established for an International Joint PhD programme.

Final Ph.D title: Ph.D Doctor in in Enviromental Sustainability and Wellbeing. **A double degree is awarded to students enrolled in the Joint PhD Programme** between Università di Ferrara and estern Sydney University

Managing Department: Studi Umanistici

Study abroad: at least 6 months abroad during the Ph.D course.

Curriculum: NO