

Ph.D. Course in Science and Technology for Sustainable Development

The main objective of the PhD course in Sciences and Technologies for Sustainable Development is to train professional profiles that integrate sustainability skills with the technical abilities required by specific functions, through transdisciplinary training for the acquisition of new skills for the environmental, economic and social aspects of sustainable development in line with the sDGS of the UN 2030 agenda.

The course is established on the following three lines:

1) *Climate, Energy and Urban System* focused on education on the basic knowledge of climate change and increasing pollution and on research of their impacts on ecosystems and on the territory. Moreover, energy transition, decarbonisation of the economy, smart cities and urban planning. Finally, on mitigation and adaptation to climate and environmental changes.

2) *Circular Economy* focused on training to accelerate the transition to the circular economy through the innovation of production models of goods and services of companies, businesses and local authorities and awareness of responsible consumption.

3) *Health and Social Inclusion* focused on training on the impact of climate, environmental, urban and economy changes on human health, migration, community inclusion.

Teaching activity planned for the XXXVII cycle

1° year

CFU	Activity common to all the PhD Student
2	Introduction to Sustainability development concepts
2	Research Proposal Preparation
2	Communication: Research presentation and people engagement
3	Introduction to Big Data and analysis
2	Ethical issues in public health and clinical studies

2° year

CFU	Activity suggested for PhD Student focusing on Climate, Energy and Urban system
2	Earth system: Climate Change and Air pollution
2	Advanced Programming with MATLAB

2	Design with the nature. Green infrastructures and ecosystem services
2	Urban form and climate change
2	The Design for Sustainable Development

2° year

CFU	Activity suggested for PhD Student focusing on Circular Economy
2	Economy and business models
3	Circular economy production systems and entrepreneurship
2	Digital transformation and circular
3	Advanced data analysis with: SPSS, STATA and R

2° year

CFU	Activity suggested for PhD Student focusing on Health and Social Inclusion
2	Materials and biomaterials and their effects in human health
2	Nutrition and health
2	Epidemiology and machine learning in medicine
2	The connections between air pollution and genetics/epigenetics
2	Social and health impacts of forced migration

Thematic Seminars

The teaching activities will be combined with seminars on the main topics of the PhD Course in Science and Technology for Sustainable Development held by distinguished scientists and speakers from other universities, research centers and companies, both Italian and international, upon invitation from the Coordinator or other professors of the Teaching Board of the PhD Course.

Seminars and courses organized by the Scuola Superiore

Other courses and seminars, in common with other Ph.D. Courses of the University 'G. d'Annunzio' of Chieti-Pescara, will be organized by the Scuola Superiore every year. The seminars and courses are:

Scientific English

Safety in Research Workplaces

Valorisation of research activity: presentation of patent proposals

The PhD Course Coordinator

Prof. Piero Di Carlo

piero.dicarlo@unich.it

Dottorato in Scienze e Tecnologie per lo Sviluppo Sostenibile

Il corso di Dottorato in Scienze e Tecnologie per lo Sviluppo Sostenibile ha come obiettivo principale quello di formare profili professionali che integrano competenze in materia di sostenibilità alle competenze tecniche richieste da specifiche funzioni, mediante una formazione transdisciplinare per l'acquisizione di nuove competenze per il bene comune sugli aspetti ambientali, economici e sociali dello sviluppo sostenibile in linea con gli sDGS dell'agenda ONU 2030.

Il Corso si sviluppa sulle seguenti tre linee:

1) CLIMA, ENERGIA e SISTEMA URBANO incentrato sulla formazione ai cambiamenti climatici, dell'aumento dell'inquinamento e sui loro impatti sugli ecosistemi e sul territorio; la transizione energetica, decarbonizzazione dell'economia, smart city e della pianificazione urbana sulla mitigazione e l'adattamento ai cambiamenti climatici e ambientali.

2) ECONOMIA CIRCOLARE incentrato sulla formazione per accelerare la transizione verso l'economia circolare attraverso l'innovazione di modelli di produzione di beni e servizi delle aziende, imprese e degli enti territoriali e sensibilizzazione ad un consumo responsabile.

3) SALUTE E INCLUSIONE SOCIALE incentrato sulla formazione dell'impatto dei cambiamenti climatici, ambientali, del tessuto urbano e dell'economia sulla salute umana, le migrazioni, l'inclusione nelle comunità.

Attività didattica programmata XXXVII ciclo

1° year

CFU	Activity common to all the PhD Student
2	Introduction to Sustainability development concepts
2	Research Proposal Preparation
2	Communication: Research presentation and people engagement
3	Introduction to Big Data and analysis
2	Ethical issues in public health and clinical studies

2° year

CFU	Activity suggested for PhD Student focusing on Climate, Energy and Urban system
2	Earth system: Climate Change and Air pollution
2	Advanced Programming with MATLAB
2	Design with the nature. Green infrastructures and ecosystem services

2	Urban form and climate change
2	The Design for Sustainable Development

2° year

CFU	Activity suggested for PhD Student focusing on Circular Economy
2	Economy and business models
3	Circular economy production systems and entrepreneurship
2	Digital transformation and circular
3	Advanced data analysis with: SPSS, STATA and R

2° year

CFU	Activity suggested for PhD Student focusing on Health and Social Inclusion
2	Materials and biomaterials and their effects in human health
2	Nutrition and health
2	Epidemiology and machine learning in medicine
2	The connections between air pollution and genetics/epigenetics
2	Social and health impacts of forced migration

Seminari tematici

Le attività didattiche saranno integrate con seminari sugli argomenti principali del corso di dottorato in Scienza e tecnologia per lo sviluppo sostenibile tenuti da ricercatori e relatori di altre università, centri di ricerca e aziende, sia italiani che internazionali, su invito del coordinatore o di altri professori del Collegio dei docenti del corso di dottorato.

Seminari organizzati dalla Scuola Superiore

Altri corsi e seminari, in comune con altri dottorandi dell'Università "G. d'Annunzio" di Chieti-Pescara, saranno organizzati dalla Scuola Superiore ogni anno e i principali sono i seguenti:

Inglese Scientifico

Sicurezza negli ambienti di lavoro

Valorizzazione dell'attività di ricerca: presentazione di proposte brevettuali

Coordinatore

Prof. Piero Di Carlo

piero.dicarlo@unich.it