

The Copernicus Green revolution for Sustainable Development



Our planet is undergoing an unprecedented climate change, and the Green Deal is the EU's response to this challenge. Copernicus satellite data are part of the EU's strategy to achieve Sustainable Development Goals (SDGs) in Europe, towards a more resilient society. However, new problem-solving expertise and soft skills are needed to unlock this European revolutionary full potential.

This transdisciplinary doctoral course introduces, at the basic level, the next generation of European professionals and researchers to the potential of Copernicus data in many different fields. To know more about the new, value-added services and products for the citizens can be of critical importance when planning a greener, more resilient and more inclusive society.

The course is organised into seminars, including both theoretical and practical/application topics. It is addressed to all Engineering, Architecture and Design students and it does not require an "a priori" background in Earth Observation.

The specific learning skills acquired by the students are:

- The general knowledge of the European Copernicus Programme and its relationship with the European Green Deal, the Sustainable Development Goals, and the mitigation policies/actions towards climate change adaptation.
- The multidisciplinary approach introduces students to the economical, technical, and social aspects of Copernicus in the light of the European strategy for a greener, more resilient and more inclusive society.
- The transdisciplinary applicability in many different fields of Engineering, Architecture and Design.
- The ability to contextualise the concepts and tools learned in their specific doctoral research.
- Teamwork attitude and creativity in preparing a presentation and a short video (communication skills).

Teaching: The course will be held in English language and in blended learning mod

Detailed timetable of teaching activities

Lectures will be held from February until June 2024

Date: first fortnight of February 2024

Lecture#1: Copernicus: The European paradigm for smart, sustainable and inclusive growth (2h)
Prof. Bernardo De Bernardinis, coordinator of the Italian Consortium for Copernicus Academy

Date: second fortnight of February 2024

Lecture#2: Space economy: an emerging business paradigm (2h)
Prof. Antonio Ghezzi and Dr. Jacopo Manotti, POLIMI

Date: first fortnight of March 2024

Lecture#3: Mission project life cycle and hi-tech materials (3h)
Prof. Michelle Lavagna, POLIMI

Date: second fortnight of March 2024

Lecture#4: Listening to the Earth: introduction to SAR Earth Observation (3h)
Prof. Andrea Virgilio Monti-Guarnieri and Dr. Marco Manzoni, POLIMI

Date: first fortnight of April 2024

Lecture#5: Seeing the colours of the invisible: introduction to multispectral Earth Observation (3h)
Prof. Marco Gianinetto, POLIMI

Date: second fortnight of April 2024

Lecture#6: Destination Earth (3h)
Prof. Maria Brovelli, POLIMI

Date: first fortnight of May 2024

Lecture#7: Copernicus data and services at glance (3h)
Prof. Daniele Oxoli, POLIMI

Date: second fortnight of May 2024

Lecture#8: Land degradation monitoring under climate change pressures for Urban resilience. Early warning and regenerative agriculture (2h)
Prof. Raffaella Brumana, POLIMI

Date: first fortnight of June 2024

Lecture#9: Copernicus Emergency Management Service (2h) & Social media information and emergency management (1h)
Prof. Daniele Oxoli and Barbara Pernici, POLIMI

Date: second fortnight of June 2024

Lecture#10: Copernicus for United Nations Sustainable Developments Goals (2h)
Prof. Branka Cuca, POLIMI

For more information, please visit:

https://www11.ceda.polimi.it/schedaincarico/schedaincarico/controller/scheda_publica/SchedaPublic.do?&evn_default=evento&c_classe=819897&polij_device_category=DESKTOP&_pj0=0&_pj1=d4917dc683aead22f248716c45c20cfe