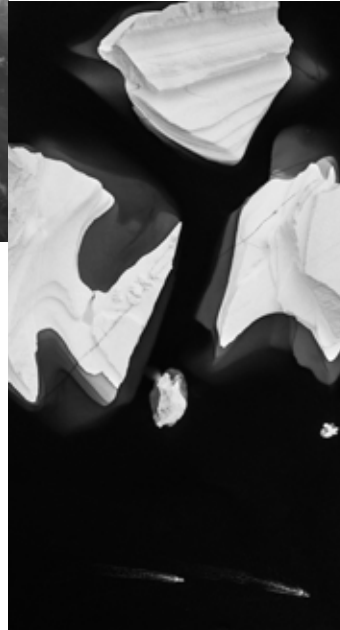


# Climate Change:

adaptation and mitigation solutions

2<sup>nd</sup> level Specializing Master's Programme

January -  
December 2023  
Torino, Italy



Politecnico  
di Torino



Under the auspices of:



# Why choose this master?

The world is changing rapidly and the ability to anticipate risks and provide effective solutions to face the effects of climate change is more important than ever.

The social and economic impacts of climate change have serious consequences on both human beings and the environment, and the need to understand how to mitigate the damages and adapt to them strategically is nowadays a key issue.

The 2<sup>nd</sup> level Specializing Master in “Climate Change: adaptation and mitigation solutions”

of Politecnico di Torino proposes a programme aimed at providing a comprehensive understanding of the climate change impacts and the innovative technologies that will drive the mitigation and adaptation responses to global warming.

In the 4<sup>th</sup> edition of the programme young graduates and professionals with a scientific and/or technical background will have the chance to:

1. Acquire a full understanding of the dynamics underpinning the ongoing global warming and the associated climatic changes and quantify their impact on the natural and built environment.
2. Receive a complete and detailed overview of the technologies that will drive the transition towards decarbonization in key sectors (e.g. energy, transport, agriculture) and explore how to apply the solutions in real-world situations.
3. Profit from a think-tank environment promoting the exchange of ideas and expertise with researchers from top-level universities and top managers from the private sector.
4. Gain practical experiences in a well-established network of outstanding companies engaged in production & processing, and service-provision.





# Programme structure

The 2<sup>nd</sup> level Specializing Master's Programme in "Climate Change: adaptation and mitigation solutions" is a 1-year programme scheduled from January to December 2023, full time from Monday to Friday. It combines 4 taught modules including frontal lectures, lab activities and hands-on tutorials (from January to July), followed by a 500-hour internship in one of the partner companies (between September and November). The award ceremony will be held in December 2023. The successful completion of the Master's Programme will provide students with 66 ECTSs.

The programme is articulated as follows:

## **Module 1: Preliminary Courses (130 h)**

An Introduction to Climate Change 30h  
Earth Observation and Climate Monitoring 30h  
Climate Policy, Economics and Finance 30h  
Energy Transition and Global Sustainability 20h  
AI for Climate Change 20h

## **Module 2: Climate Change Mitigation (140 h)**

Carbon Capture and Negative Emission Technologies 25h  
CO<sub>2</sub> and H<sub>2</sub> Underground Storage 20h  
Carbon Footprinting and Carbon Trading 25h  
Sustainable Transport Systems 25h  
Energy-Efficient Buildings 25h  
Renewables 20h

## **Module 3: Climate Change Adaptation (130 h)**

Climate-Resilient Cities and Communities 30h  
Coping with Extreme Events 30h  
Food-Water Nexus in a Changing Climate 30h  
Sustainable Management 20h  
Resilient Infrastructure Systems 20h

## **Module 4: Corporate Approaches to Climate Change (80 h)**

Corporate Social Accountability 20h  
Green Procurement and Sustainable Supply Chain 20h  
Climate-Change Compliance Reporting and Communication 20h  
Eco – Innovation and Social Entrepreneurship 20h

**1 week workshop with partner companies, site and lab visits**

**1-day hackathon about sustainability**

**Internship 500h**



# Single course enrolment

You can enrol in some of the single courses of this Specializing Master's programme, without enrolling in the entire programme, provided that you meet the requirements prescribed for the programme.

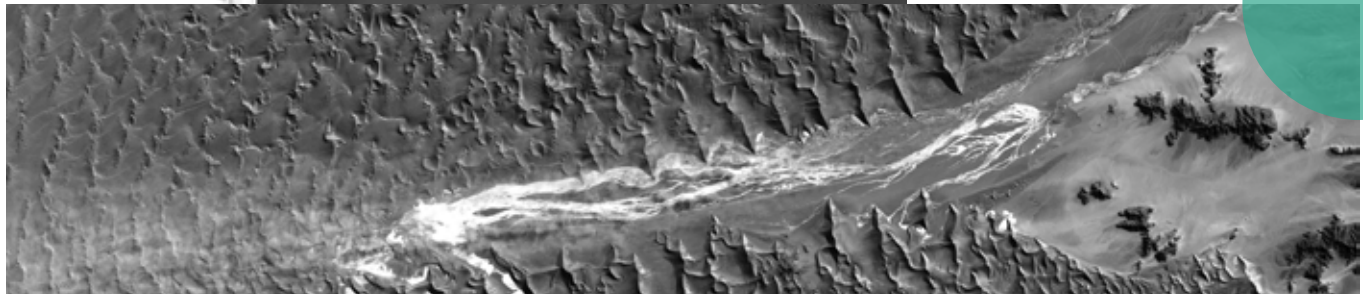
Each course is open to a maximum of 7 participants, who will be admitted on a first come first served basis.

Participation fee for single course enrolment is composed of a fixed fee (21,00 Euro) plus the cost of the course you want to purchase (270€ for 30h courses, 180€ for 20h courses).

## **Upon the completion of the course, you will receive:**

- The certificate of attendance if you attended at least 85% of the purchased course
- The certificate stating the advancements, credits and the scientific field if you attended at least 85% of the course and passed the course's exam

More information can be found at this link: [https://didattica.polito.it/master/climate\\_change/2023/single\\_course](https://didattica.polito.it/master/climate_change/2023/single_course)



# Our partners

A strong corporate partnership has been ensured through the involvement of a number of relevant stakeholders. Stakeholders will have slots to explain how their company deals with climate change and some of them will host Master students for their internship period. Top managers from the partner companies will also be involved in the relevant modules.

## Corporate partners\*



## Scientific partners\*



\* List of partners of the 2022 edition.

# Faculty

**Lorenzo Chelleri**

Universitat Internacional  
de Catalunya  
Climate-Resilient Cities  
and Communities



**Alessandra Colombelli**

Politecnico di Torino  
Eco-innovation and Social  
Entrepreneurship



**Stefano Corgnati**

Politecnico di Torino  
Energy-Efficient  
Buildings



**Ericka Costa**

Università di Trento  
Corporate Social  
Accountability



**Valeria Costantini**

Università Roma Tre  
Climate Policy,  
Economics and Finance



**Manlio Coviello**

Pontificia Universidad  
Católica de Chile  
Energy Transition and Global  
Sustainability



**Paolo D' Odorico**

UC Berkeley  
Food-Water Nexus in a  
Changing Climate



**Bruno Dalla Chiara**

Politecnico di Torino  
Sustainable Transport  
Systems



**Luciano De Propriis**

Consorzio ELIS  
Climate-Change  
Compliance Reporting and  
Communication



**Marco Piras**

Politecnico di Torino  
Earth Observation and  
Climate Monitoring



**Rajandrea Sethi**

Politecnico di Torino  
Carbon Capture and  
Storage



**Francesca Verga**

Politecnico di Torino  
CO2 and H2 Underground  
Storage



**Pietro Salizzoni**

École Centrale de Lyon  
An Introduction to  
Climate Change



**Claudio Comoglio**

Politecnico di Torino  
Carbon Footprinting and  
Carbon Trading



**Davide Poggi**

Politecnico di Torino  
Renewables



**Alberto Viglione**

Politecnico di Torino  
Coping with Extreme  
Events



**Lucia Tsantilis**

Politecnico di Torino  
Resilient Infrastructure  
Systems



**Marco Formentini**

Università di Trento  
Green Procurement and  
Sustainable Supply Chain



**Roberto  
Fernandez-Moran**

University of Valencia  
AI for Climate Change



**Chiara Ravetti**

Politecnico di Torino  
Sustainable  
Management

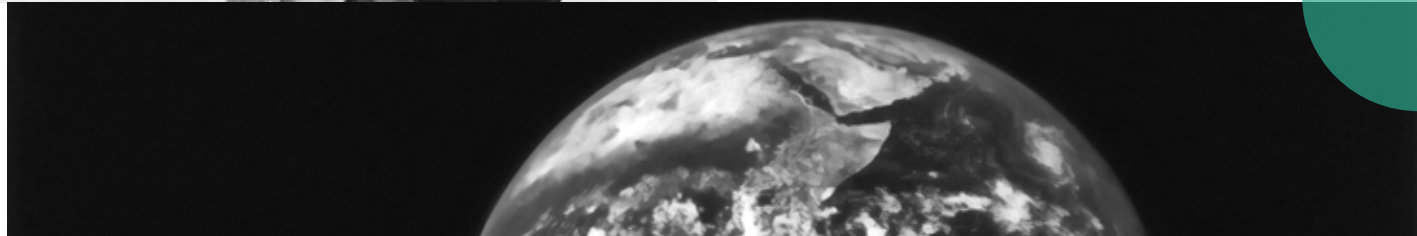


The Master programme offers teaching by highly qualified professionals from academy and research institutions. Participants will also have the opportunity to interact with managers from the business sector who will bring their expertise and will shed new light on future challenges and opportunities deriving from the on-going climate crisis.



# Career opportunities

About 24 million new jobs will be created globally by 2030 if the right policies to promote a greener economy are put in place<sup>1</sup>. Already now, in September 2022, the number of open job positions including the keyword “climate change” is 8,400+ in EU and 18,000+ World-wide (Source: LinkedIn).



Most of these positions are open to graduate candidates only. This Master programme helps students and professionals to enter this market offering a specialized training suitable for executive positions as climate-change specialists in the innovation and sustainability departments of companies and organizations. These include companies dealing with: infrastructure-resilience and energy transition issues, urban planning and development, insurance and finance, research and development of innovative environmental technologies, certification companies, academic and/or research institutes, government agencies, international organisations and NGOs.

<sup>1</sup>*Greening Jobs: World Employment Social Outlook 2018* , International Labour Organisation

*"We can fight climate change and create millions of good, green, union jobs in the process"*

10/09/2019

## **The Guardian**



*"Technological change via energy efficiency in manufacturing is an engine of growth"*

05/2016

## **Energy Policy, Elsevier**



*"A novel European Green New Deal to tackle climate change"*

8/10/2018

## **Social Europe**



*"Job prospects vary by country, but most forecasts suggest strong growth internationally throughout the green-building sector."*

25/02/2015

## **Nature**

# Admission requirements

Applicants must hold a full degree (Master of Science degree/Laurea specialistica/Laurea magistrale) by the enrolment deadline in order to be admitted to this 2nd level Specializing Master's Programme. The programme is intended for graduates who completed a Master's degree course (or equivalent) in the following areas:

- Engineering
- Architecture
- Geography
- Science and Technology
- Agricultural sciences
- Mathematics
- Physics
- Biology
- Chemistry
- Economics
- Geoscience
- Computer science

All applicants must prove to have good proficiency in English. Please refer to the Call for applications for details.

The selection will be based on:

- motivation letter and academic background, including a summary of the Master Thesis
- significance and coherence with the Master's topics of the professional and formative experience.
- interview of the short-listed candidates.



# Timeline

Application submission by October 21<sup>st</sup> 2022 at 1 pm

Start of the programme: January 2023

Award ceremony: December 2023

## Tuition fee and waivers

The participation fee is 4,000 euro for the entire year.

The participation fee includes lectures, didactic materials, and technical visits.

PolIto will offer two types of merit waivers:

- 10 waivers of 4,000 euro each (covering the entire participation fee).
- 10 waivers of 2,000 euro each (covering 50% of the participation fee).

For further details on waivers please refer to the Call for applications.



# Studying at PoliT0

For more than 150 years, Politecnico di Torino (PoliT0) has been an Italian and world-leading institution in education, research, technological transfer, and services in all sectors of architecture and engineering.

Currently, PoliT0 ranks among the top 20 European technical universities for education and research in engineering and architecture.

For additional information please visit:  
<https://www.polito.it/>

## Living in Turin

Turin is a fascinating city located in the north-western Italy hosting around 870.000 inhabitants. The city offers high living standards and is buzzing with live-concerts, exhibitions and shows happening in a city center which is rich of monuments, museums, art galleries, beautiful architecture, theatres, historical cafés, and restaurants. Turin is famous for its food and its surroundings with small villages full of history and picturesque countryside. Turin is strategically located within reachable distance to ski resorts, natural parks, and mountains.

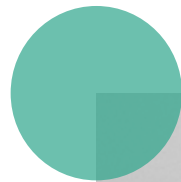
<https://www.turismotorino.org/en>



# Connect with us

For questions regarding application procedure, admission requirements and scholarships: [master.universitari@polito.it](mailto:master.universitari@polito.it) / +39 011.090.3315 .

For enquiries on the educational programme and partnerships: [mastercc@polito.it](mailto:mastercc@polito.it) .



# At a glance

Starting date January 2023

Course length 1 year

Application submission by October 21<sup>st</sup> 2022 at 1 pm

Participants maximum number 25

ECTS 66

Language English

Venue Politecnico di Torino  
Campus Lingotto  
Via Nizza 230, 10126 Torino  
[https://didattica.polito.it/master/home/en/the\\_campus](https://didattica.polito.it/master/home/en/the_campus)

Costs The participation fee is 4,000 euro for the entire programme.

Fee waivers 10 waivers of 4,000 euro each (covering the entire participation fee)  
10 waivers of 2,000 euro each (covering 50% of the participation fee)

Director Marco Piras

Master webpage - Call for applications Link: [https://didattica.polito.it/master/climate\\_change/2023](https://didattica.polito.it/master/climate_change/2023)

Single Course Enrolment [https://didattica.polito.it/master/climate\\_change/2023/single\\_course](https://didattica.polito.it/master/climate_change/2023/single_course)





“The climate emergency is a race we are losing,  
but it is a race we can win.”

Antonio Guterres, UN Secretary General at the  
Climate Summit, September 2019



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