



DIPARTIMENTO
DI GEOSCIENZE



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Via Gradenigo, 6
35131 Padova
Tel.: +39 049 8279110
fax +39 049 8279111

Summer School in Earth and Climate Dynamics

Padova, Italy, July 28th – August 3rd

Department of Geosciences, University of Padova

Coordinator: **Prof. Fabrizio Nestola**

Co-coordinators: **Prof. Massimiliano Ghinassi, Prof.ssa Claudia Agnini, Prof. Andrea D'Alpaos**

Short description

The Summer School in Earth and Climate Dynamics is aimed at 16 to 18 year old students who are interested in pursuing a future in understanding and protecting our Planet from geological hazards and the impacts of climate change. Since 2023, the University of Padova has offered a unique international Bachelor's degree in "Earth and Climate Dynamics" (ECD) taught in English. This program provides a solid background in multiple disciplines and is designed to train a new generation of highly interdisciplinary professionals who will possess knowledge of the individual components of the Earth System including the lithosphere, atmosphere, hydrosphere and biosphere and their complex interactions. The ECD Bachelor's degree aims to equip students with the skills to address the future challenges arising from the impact of climate change on the Earth System.

The Summer School offers an introduction to the ECD Bachelor's program for up to 25 participants offering a full-immersion experience including lectures, laboratory activities and field trips, over the course of one week, starting on Monday, July 28th, 2025.

Detailed schedule

- Monday 28th July

9.00 – 12.30: lectures at the Department of Geosciences on basic introduction to geology, paleoclimatology, geomorphology, oceanography and physics of the atmosphere.

12.30 – 14.30: lunch

14.30 – 17:30: instructions and overview about the 2-days field trip to the Dolomites scheduled for Tuesday 29th and Wednesday 30th July.

- Tuesday 29th and Wednesday 30th July

Travel by bus and visit to the UNESCO World Heritage-listed Dolomites and the famous Vajont Dam, the site of one of the most catastrophic disasters in Italy and to examine the aftermath of the 2018 Vaia storm, which caused considerable damage to the North-eastern Italian forests.

In detail, we will leave on 29th by bus at 8.30 from the Department of Geosciences, Padova, and reach the Vajont Dam before lunch. After lunch, we will visit the site for the entire afternoon. The group will be then accommodated in Hotel for one night (check-in on 29th and check-out on 30th).

On Wednesday 30th, after breakfast, we will leave for reaching the sites damaged by the Vaia storm in 2018. We will back to Padova before dinner.

- Thursday 31st July

9.00 – 12.30: the students will be at the Department of Geosciences where most of the day will be dedicated to engaging laboratory activities. They will receive training in using microscopes to identify microfossils that are the keys for understanding the Earth's past climate and will also study geological cores that reveal the sea-level changes over both geological timescales and recent decades.

12.30 – 14.30: lunch

14.30 – 17.30: the first part of the afternoon will be dedicated to the tour of the Department of Geosciences, visiting several laboratories and other facilities.

The last part of the day will focus on providing background and general information about the third field trip day scheduled for Friday, August 1st, to the Po River delta, a unique biodiversity-hotspot listed among the UNESCO Biosphere Reserves and Cultural Heritage Sites.

- Friday 1st August

8.30: meeting at the Department of Geosciences and travel by bus to the Po River delta. During the morning, students will have the opportunity to navigate the intricate network of channels draining the delta and observe how natural processes have restored areas that were heavily impacted by human activities in the 1950s. After lunch, they will collect and analyze sedimentary cores from deposits that have accumulated in the delta over the past 70 years.

- Saturday 2nd August

10.00 – 12.30: students will return to the Department of Geosciences, where they will continue their training on different laboratory activities (e.g., identification of minerals in rocks using optical microscopes; identification of minerals by X-ray diffraction).

12.30 – 14.30: lunch

14.30 – 17.30: the students will work in groups to prepare a report summarizing their week.

- Saturday 3rd August

The Summer School will conclude with a final ceremony awarding participation diplomas (equivalent to 3 ECTS that will be considered part of the 180 ECTS necessary to complete the Earth and Climate Dynamics Bachelor program at our University). The final ceremony will be held at the new Museum of Nature and Humankind of the University of Padova (the largest university museum in natural sciences in Europe), followed by a guided tour of the exceptional natural science collections.

Prof. Fabrizio Nestola