

**Course offered by the PhD program
in Civil, Chemical and Environmental Engineering
a.y. 2025/2026 (41 cycle)**

(course is open for participation of students from other PhD cycles or programs)

1. Title

Impact of precipitation measurement biases in hydrological studies

2. Course Objectives and Description

The objective of the course is to give students some insights into the importance of accurate precipitation measurements in hydrological studies and to quantify the impact of measurement biases for specific applications such as the assessment of long-term trends in historical records, the statistical analysis of rainfall extremes, the management of water resources at the catchment scale, the design of nature based solutions for the mitigation of local flooding in urban areas. At the end of the course students will be able to recognise the main sources of measurement bias associated with the most common instruments used to measure liquid and solid precipitation. Recent development of European technical standards will be described. Students will learn to quantify the magnitude of the biases and to assess their propagation into the modelling and interpretation of hydrological processes.

3. Course Organization

Frontal lectures with specific examples.

4. Teacher

Arianna Cauteruccio

5. Duration and credits

12 hours – 2 credits

6. Activation mode and teaching period

November/December 2025 – Course is offered on the Teams platform for remote attendance.

7. Deadline for registration

November 2025 – registration by e-mail (arianna.cauteruccio@edu.unige.it)

8. Final exam

Close ended question tests during the lectures.