

**Course offered for the PhD program
in Civil, Chemical and Environmental Engineering
Curriculum in Fluid Dynamics and Environmental Engineering
a.a. 2025/2026**

(possibility of participation for students in other PhD cycles or other PhD courses)

1. Title

Perturbation methods 1

2. Course Description

The course is aimed at the description of the perturbation methods, mathematical approaches for calculating approximate solutions that are possible when in the problem under consideration appears a dimensionless parameter which is very small or very large. The course will illustrate the main perturbation techniques used for the solution of fluid dynamics problems.

3. Course Organization

The course consists of lectures and exercises in the classroom.

4. Teacher

Nicoletta Tambroni and Giovanna Vittori

5. Duration and credits

The course consists of 10 hours of lessons (2 credits).

6. Activation mode and teaching period

The course will be held on February 2026. The minimum number of participants to activate the course is 7.

7. Deadline for registration

The deadline for applications is January, the 15th 2026 (please, send an e-mail confirmation to Prof.ssa N. Tambroni Nicoletta.Tambroni@unige.it).

8. Final exam

Written examination (solution to a simple problem) to be taken within one month from the end of the course.