

**Course offered for the PhD program  
in Civil, Chemical and Environmental Engineering  
a.y. 2023/2024 (XXXIX cycle)**

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

**1. Title**

Hydrodynamic stability

**2. Course Description**

The course is a short introduction to hydrodynamic stability theory and covers the basic concepts regarding temporal stability of parallel shear flows. In particular we focus our attention on concepts like modal- and nonmodal stability analysis, as well as optimal perturbations and their respective relation to transition from laminar to turbulent flow.

**3. Course Organization**

The course consists of lectures and exercises in the classroom.

**4. Teacher**

Jan Pralits

**5. Duration and credits**

The course consists of 13 hours of lessons (8 hours of theory and 5 hours of programming exercises), and is valid 2 credits.

**6. Activation mode and teaching period**

The course is annual and will be held in February 2024. The minimum number of participants to activate the course is 5. Students interested in the course are requested to send an email to Prof. Jan Pralits ([jan.pralits@unige.it](mailto:jan.pralits@unige.it)).

**7. Deadline for registration**

The deadline for applications is January 15<sup>th</sup>, 2024.

**8. Final exam**

Programming exercises in class of different arguments treated during the course