

PhD program in Civil, Chemical and Environmental Engineering

Curriculum in Fluid Dynamics and Environmental Engineering

Academic year 2021/2022

1. Title of the course

Hydrodynamic stability

2. Contents

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. Structure of the course

The course consists of lectures and exercises in the classroom.

4. Lecturers

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. Period and registration procedure

The course is annual and will be held in February 2022. 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).

7. Deadline for registration

The deadline for applications is January 15th, 2022.

8. Final exam

Programming exercises in class of different arguments treated during the course