

**GEORGIA INSTITUTE OF TECHNOLOGY**  
**School of Civil & Environmental Engineering**

**CEE6251 Fluid Mechanics**

**INSTRUCTOR:**

Francesco Fedele

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Office Hours: by appointment



**PREREQUISITE:** Vector Calculus, Matrix Algebra, Differential Equations, Introduction to Fluid Mechanics or equivalent

**TEXT:** Kundu and Cohen, *Fluid Mechanics*, 4th Ed., Elsevier Academic Press (2008), Class notes and handouts, Online material: the student is strongly advised to take opportunity of the 'online Encyclopedia' available on the net and use it. Sites like the mathworld of Wolfram, goggle and scholar.google are efficient tools to search for ideas, topics and materials in science.

**TOPICS:**

- I. Fluid characteristics and properties
- II. Review of tensors and vector calculus
- III. Kinematics
- IV. Conservation Equations
- V. Dynamic Similarity
- VI. Vorticity
- VII. Laminar Flow Solutions
- VIII. Irrotational Flow
- IX. Water waves
- X. Boundary Layers

**GRADING:**

Homework	20%
Midterm (before Thanksgiving)	40%
Final Exam	40%

## EXAM POLICY

- Tests will be given as take-home exams. A test is posted on CANVAS at 6 pm and it will be due at 7:30 pm of the same day.
- There will be one mid-semester exam and a final that will be based on all the topics taught during the entire semester. Both the exams are closed book, only a calculator is allowed, but no equation-sheet. Violation of this exam rule will be considered cheating and will be dealt with accordingly to the GT Academic Honor Code.
- Personal trips must be scheduled around exams. Exams **will not** be rescheduled to accommodate early trips home or any other trips of personal nature.
- Cheating off of another person's test is unethical and unacceptable. Cheating off of anyone else's work is a direct violation of the GT Academic Honor Code, and will be dealt with accordingly.
- For any questions involving these or any other Academic Honor Code issues, please consult the instructor or [www.honor.gatech.edu](http://www.honor.gatech.edu)

## COURSE POLICY

- Lectures will be delivered in-person. Some lectures may be delivered in remote mode.
- Participation to every lecture is essential.
- Plagiarizing is defined by Webster's Dictionary as "to steal and pass off (the ideas or words of another) as one's own: use (another's production) without crediting the source." If caught plagiarizing, you will be dealt with according to the GT Academic Honor Code.
- Homework grading: 60 points for complete submission (*all problems must be solved and posted in T-square by due time*), and 40 points if (and only if) one problem randomly graded is correctly solved. An incorrect or incomplete problem solution will receive zero points (no partial grading). So, make sure to solve all the problems correctly, viz. both the numerical values and applications/derivations of formulas/equations must be correct. I expect to receive your submissions posted in T-square by the due time, or I will assign a **zero grade** to a late submission. No justifications will be accepted.
- You may work with other classmates to solve/prepare the homework. However, you must turn in separate versions of the homework with the following written on it: your name and the names of everyone you collaborated with.
- Unauthorized use of any previous semester course materials, such as tests, quizzes, homework, projects, and any other coursework, other than that provided by the instructor, is prohibited in this course. Using these materials will be considered a direct violation of academic policy and will be dealt with according to the GT Academic Honor Code. For any questions involving these or any other Academic Honor Code issues, please consult the instructor or [www.honor.gatech.edu](http://www.honor.gatech.edu).
- **Office Hours:** to meet students' requirements, needs, and comfort levels, meetings and office hours will be offered in-person, virtually, or outdoors.
- Students are expected to be familiar with and abide by the Institute guidelines, information, and updates related to Covid-19. Find campus operational updates, Frequently Asked Questions, and details on campus surveillance testing and vaccine appointments on the [Tech Moving Forward site](#).
- **Recordings of Class Sessions and Required Permissions:** classes may not be recorded by students without the express consent of the instructor unless it is pursuant to an accommodation granted by the Office of Disability services. Class recordings, lectures, presentations, and other materials posted on Canvas or Piazza are for the sole purpose of educating the students currently enrolled in the course. Students may not record or share the materials or recordings, including screen capturing or automated bots, unless the instructor gives permission.

## **OFFICE OF DISABILITY SERVICES**

The Georgia Institute of Technology has policies regarding disability accommodation, which are administered through The Office of Disability Services (<http://disabilityservices.gatech.edu/>). For students with disabilities, please contact this Office to request classroom accommodations.

## **COMMUNICATION PROTOCOL**

- All questions regarding lectures/homework will be addressed through the venue of PIAZZA ([www.piazza.com](http://www.piazza.com)).
- I will ONLY reply to emails concerning topics/issues that cannot be addressed via PIAZZA.
- Students are strongly encouraged to participate to discussions in PIAZZA so they can learn from their peer colleagues.
- SUBJECT line in email: SUBJECT: CEE6251- Meaningful Tag Line. Family name