CEE 3040 Syllabus

Rev. 4/2/2026

Course Prefix: CEE

Course Number: 3040

Course Name: Fluid Mechanics

Semester: FA

Academic Year: 2026-2027

Instructor Information

Instructor: Prof. Jian Luo

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General Course Information

Prerequisite:

CEE-2040 Dynamics (or CEE-2020 Statics & Dynamics)

Course Description:

Elementary mechanics of fluids with emphasis on hydrostatics, control volume analysis of flowing fluids using kinematics, continuity, energy, and momentum principles; similitude, pipe flow.

Course Learning Outcomes:

Outcome 1: The student will demonstrate an understanding of the basic concepts of fluid mechanics, with an emphasis on the formulation and solution of flow problems.

Outcome 2: The student will build on skills acquired in mathematics, statics, and dynamics courses to solve flow problems of civil and environmental engineering relevance.

Outcome 3: The student will demonstrate the ability to apply fundamental flow analysis techniques to fluid systems.

Required Course Materials:

Munson, Young, and Okiiski, Fundamentals of Fluid Mechanics, 9/e Edition, John Wiley and Sons. WileyPlus access is required for homework.

Grading Policy:

Homework

Weekly homework (a total of 10) will be assigned through Canvas-integrated WileyPlus. Late homework will receive 1/2 credit. Homework will be submitted through the WileyPlus online system, in which you have online access to the textbook and other supplemental materials. You have 5 attempts for each homework problem to submit the correct answer (within a tolerance of $\pm$ 2% to account for round-off errors), after which you can access the published solution. The assigned problems are algorithmic, which means each student will have unique input parameters and final answers.

Exams

Three midterm exams and a final exam; the schedule will be updated

All exams are closed-book. However, one page (8-1/2 inches by 11 inches) (single-sided) of notes is allowed.

Course Grade Scale

A 100%-90%

B 89%-80%

C 79%-70%

D 69%-60%

F <60%

Method 1: graded homework (10%) + three midterm exams (30% each)

Method 2: graded homework (10%) + two best midterm exams (25% each) + final exam (40%)

Your final course grade will be the higher grade of Methods 1 and 2. You have the option to accept the Method 1 grade and be exempted from taking the final exam.

Course Schedule

Chapter 1	Introduction (HW #1)
Chapter 2	Fluid Statics (HW #2 and #3)
	Midterm Exam 1 (HW #1 – #3)
Chapter 4	Kinematics (HW #4)
Chapter 5.1	Conservation of Mass (HW #5)
Chapter 3	Bernoulli Equation (HW #6)
Chapter 5.2	Conservation of Momentum (HW #7)
	Midterm Exam 2 (HW #4 - #7)
Chapter 5.3	Conservation of Energy (HW #8)
Chapter 7	Dimensional Analysis and Similitude (HW #9)
Chapter 9.1 - 2	Boundary Layers (HW #10)
	Midterm 3 (HW #8 - #10)
Chapter 6	Differential Analysis
	Review and Final Exam (HW #1 - #10)

Course Policies

Attendance Policy:

Students who miss classes, homework deadlines, or exams due to approved Institute activities (such as field trips, professional conferences, and athletic events) may make up the work missed during their absences. Institute-approved absence requests are reviewed by a faculty committee, and the student receives an official letter from the Office of the Registrar as documentation of approval.

Academic Integrity:

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit https://policylibrary.gatech.edu/student-life/academic-honor-code/. Any student suspected of violating the Honor Code, such as cheating or plagiarizing on a quiz, exam, or assignment, will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations.

Student-Faculty Expectations Agreement

The Georgia Tech community believes that it is important to continually strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. Therefore, we herein endeavor to enumerate the specific expectations of each side. However, this document is not intended to be either comprehensive or limiting in regard to the Institute's statutes. Ultimately, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. We remain committed to the ideals of Georgia Tech, agree to abide by these principles in our time here, and will encourage each other to uphold these responsibilities.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or http://disabilityservices.gatech.edu/ as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also email me as soon as possible in order to set up a time to discuss your learning needs.