

The University of Texas at El Paso
Civil Engineering Department
Syllabus
CE 2375: Introduction to Fluid Mechanics
Fall 2024

Class Reference Number:	11199
Class Meeting:	12:00-1:20 pm, TR, August 26-December 05
Class Room:	Liberal Arts Building LART 106
Textbook:	Fluid Mechanics, 3rd Edition by R.C. Hibbeler, ISBN: 013464929X <u>Pearson MasteringEngineering (comes with E-Text)</u> The purchase for access to this MasteringEngineering homework can also be made in combination with the textbook. (Available at UTEP Bookstore)
Instructor:	Mayra C. Chavez, Ph.D. Adjunct Faculty Department of Civil Engineering Office: E224 E-mail: mcchavez4@utep.edu Office Hours: 2:00- 3:00 pm, TR or by appointment
Prerequisite:	CE 2334: Statics

Course Objectives





At the end of the course, students will learn the following:

1. Understand the concept of fluid systems and control volume
2. Understand the concepts of temperature, pressure, and energy;
3. Understand fluid flow descriptions and graphical descriptions
4. Apply conservation of mass and energy;
5. Apply the Bernoulli and energy equations;
6. Apply the linear momentum equation;
7. Understand steady laminar flow within parallel plates and smooth pipes
8. Understand resistance to flow in rough pipes and minor and major losses in single pipe flow

Chapters Covered

1. Fundamental Concepts in Fluid Mechanics
2. Fluid Statics
3. Kinematics of Fluid Motion
4. Conservation of Mass
5. Work and Energy of Moving Fluids
6. Fluid Momentum
7. (9) Viscous Flow within Enclosed Conduits
8. (10) Analysis and Design for Pipe Flow

Learning Outcomes

<u>Student Learning Objective</u>	<u>Outcome</u>
Demonstrate the ability to consider different points of view and to work effectively with others to support a shared purpose or goal	 Teamwork Skills
Draw on existing knowledge bases to create “new” or “transformed” knowledge	 Critical Thinking Skills
Engage through effective exchange of information and ideas.	 Communication Skills
Find solutions to complex problems/issues.	 Problem Solving

Approved Scientific Calculators and Tools

- **Casio:** All **fx-115** models. Any Casio calculator must contain fx-115 in its model name.
- **Hewlett-Packard:** The **HP33s** and **HP 35s** models, but no others
- **Texas Instruments:** All **TI-30X** and **TI-36X** models. Any Texas Instruments calculator must contain either **TI-30X** or **TI-36X** in its model name.
- **Please use pencils on all exams!**

Grades

Your grade for this course will be based on your performance in the homework (15%), quizzes (15%), 3 mid-term exams (45%), and Final Exam (25%). Several quizzes will be given throughout the semester. The content of a quiz may be the materials covered in previous sessions or to be covered that day. There will be no make-up quizzes. Your lowest quiz will be dropped. Three exams will be given during the semester, and one comprehensive Final at the end of the semester. Every student is required to take the exams. Every exam will be counted towards your final grade.

Your final grade will be calculated based on the points you have accumulated as follows:

A	≥90
B	≥80 but <90
C	≥70 but <80
D	≥60 but <70
F	<60

The instructor reserves the right to revise this grading plan. However, students will be informed of any changes during the semester.

Homework

Students are encouraged to solve as many problems in the book as possible. Students need to complete the assigned homework problems **online** before the due date. Late homework assignment submissions will receive a deduction of 5% per day after due date, but never lower than 60% credit.

Problem Solving Tips: Start a problem with one new sheet and write down all the givens and unknowns. Then proceed with calculation procedures before entering the answer online. Write down necessary details in the solution for easy checking of calculational errors or other possible mistakes. Use the hints provided in the MasteringEngineering website for the problems. Discuss the problems with your classmates, the teaching assistant, or the instructor. You will do well in the class if you understand all the problems you solved.

Go to: <https://mlm.pearson.com/enrollment/chavez43609>.

Detailed instructions included at the end of this document.

Students are strongly advised to prepare a course portfolio documenting all materials relevant to the course. The portfolio shall contain the class notes, quizzes, exams, homework, study notes, and any relevant materials accumulated during the semester.

Attendance and Tardiness

Attendance is mandatory. Absence can be checked by the instructor through exams, roll calling, randomly picked names for problem solving in class, or other mechanisms. **You could receive an F grade if you miss more than 5 classes without the instructor's consent.** The instructor appreciates all efforts to attend the class. There will be no penalty for being late. You are always welcome to attend the class. However, all exams and quizzes will be given at *the beginning of the classes*. No additional time will be allowed for late attendees.

I will not drop you from the course. However, if you feel that you are unable to complete the course successfully, please let me know and then contact the [Registrar's Office](#) to initiate the drop process. If you do not, you are at risk of receiving an "F" for the course.

Study Aids

Instructor's Office Hours

You are always welcome to visit the instructors at the posted hours or by making an appointment.

- Office Hours: I will have office hours for your questions and comments about the course. My office hours are in-person, however, you can request a virtual meeting on TEAMS. Please see the days and times at the top of this syllabus.
- Email: UTEP e-mail is the best way to contact me. I will make every attempt to respond to your e-mail within 24 hours of receipt. When e-mailing me, be sure to email from your UTEP student e-mail account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name, and your university identification number.
- Announcements: Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

Teaching Assistant

There will be a teaching assistant (TA) assigned to each session of the course. The TA will assist the instructor in grading quizzes, proctoring exams, and answering questions. In addition to the instructor's office hours, there will be TA's office hours to answer your questions. The TA's schedule will be announced in the second week of the class.

ACES and the Tutoring Center

Students are reminded of the tutoring services available in the ACES and the library. These services are provided to you by the University. Check the schedules and make use of the services.

Course Resources: Where you can go for assistance.

UTEP provides a variety of student services and support. Please refer to the link for a listing of campus resources: https://www.utep.edu/advising/student_resources/student-success-resource-hub.html

Study Guide

Read the text to be discussed prior to the scheduled class and review the subject thoroughly after the class. Read the textbook carefully. Work on all examples given in the text and solve as many unassigned problems as you can. Expect to spend 5-8 hours each week on the subject. Establish a good studying habit and you will do very well in the class. Use the tutorial materials available in the MasteringEngineering before and after the class.

Scholastic Integrity

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying

from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

Accommodations Policy

The University is committed to providing reasonable accommodations to students with documented disabilities.

Students who become pregnant may also request reasonable accommodation, in accordance with state and federal laws and regulations and University policy. To make a request, please register with the UTEP Center for Accommodations and Support Services (CASS). Contact CASS at 915-747-5148, email them at cass@utep.edu, or apply for accommodations online via the CASS portal.

Class Schedule

Week	Date	Ch	Sections	HW Assigned	Class overview	HW Due	Notes
1	27-Aug 29-Aug	1 1	1.1-1.9	Chapter 1: 5, 11, 19, 30, 33			
2	3-Sep 5-Sep	2 2	2.1-2.10	Chapter 2: 5, 9, 37, 39, 45, 46, 49, 53,	Quiz 1	HW 1	
3	10-Sep 12-Sep	2	2.8-2.10		Quiz 2		
4	17-Sep 19-Sep				Quiz 3 (Chapter 2), Review for Exam 1 <i>Exam 1 (Chap. 1, 2)</i>	HW 2	TA TA
5	24-Sep 26-Sep	1,2 3	3.1-3.5	Chapter 3: 4, 17, 27, 30, 36, 46, 48, 51, 53	Exam 1 Review Solution		
6	1-Oct 3-Oct	4	4.1-4.4	Chapter 4: 2, 5, 11, 22, 27, 31, 39, 44, 77	Quiz 4 (Chap 3)		
7	8-Oct 10-Oct	5 5	5.1-5.5	Chapter 5: 6, 22, 41, 53, 75, 80, 95, 102	Quiz 5 (Chap 4)	HW 4	
8	15-Oct 17-Oct	6 6	6.1-6.4	Chapter 6: 4, 7, 13, 29, 38, 45, 50, 57	Quiz 6 (Chap 5)	HW 5	
9	22-Oct 24-Oct	6 3, 4, 5, 6	6.1-6.4		Quiz 7 (chapter 6) Exam 2 Review		
10	29-Oct 31-Oct				<i>Exam 2 (Chap. 3, 4, 5, 6)</i> Exam 2 Review Solution	HW 6	
11	5-Nov 7-Nov	9 9	9.1, 9.3, 9.5	Chapter 9: 1, 7, 19, 25, 30, 36, 43	Quiz 8 (Chapter 9)		
12	12-Nov 14-Nov	10 10	10.1- 10.3	Chapter 10: 1, 5, 9, 13, 24, 27, 59, 65	Quiz 9 (Chapter 10) Quiz 10 (Chapter 10)	HW 9	
13	19-Nov 21-Nov	10 10	10.1- 10.3		<i>Exam 3 Review</i> <i>Exam 3 (Chap. 9, 10)</i>		Drop deadline
14	26-Nov 28-Nov	.	.	No Class	.	.	Thanksgiving No Class
15	3-Dec	9, 10			Exam 3 Review Solution		

	5-Dec	All			Final Review	HW 10	
16	10-Dec	Finals		Tuesday, December 10th, 1:00 pm – 3:45 pm			

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.

To register for CE 2375 Fluid Mechanics:

1. Go to <https://mlm.pearson.com/enrollment/chavez43609>.
2. Sign in with your Pearson student account or create your account. For Instructors creating a Student account, do not use your instructor credentials.
3. Select any available access option, if asked.
 - Enter a prepaid access code that came with your textbook or from the bookstore.
 - Buy instant access using a credit card or PayPal.
 - Select Get temporary access without payment for 14 days.
4. Select Go to my course.
5. Select CE 2375 Fluid Mechanics from My Courses.

If you contact Pearson Support, give them the course ID: chavez43609

To sign in later:

1. Go to <https://mlm.pearson.com>.
2. Sign in with the same Pearson account you used before.
3. Select CE 2375 Fluid Mechanics from My Courses.