

**CE 2375: Introduction to Fluid Mechanics
Summer 2 2025**

Class Reference Number:	31819
Class Meeting:	11:40 am - 1:50 pm, MTWRF, 07/09/2025 - 08/04/2025
Class Room:	College of Business Admin 304
Textbook:	Fluid Mechanics, 3rd Edition by R.C. Hibbeler, ISBN: 013464929X <u>Pearson MasteringEngineering</u> The purchase for access to this MasteringEngineering homework can also be made in combination with the textbook. (Available at UTEP Bookstore)
Instructor:	Mayra Chavez, Ph.D. Associate Professor of Research Department of Civil Engineering Office: E224 E-mail: mcchavez4@utep.edu Office Hours: 2:00 pm – 3:00 pm, TR
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 Calculators (Scientific Calculators)

- **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.
- **NO GRAPHING CALCULATORS, PLAN ACCORDINGLY FOR QUIZZES AND EXAMS**
- **Please use pencils on all exams**

Grades

Your grade for this course will be assessed 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 procedures and calculations 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/chavez36095>

Detailed instructions included at the end of this document.

Course Portfolio

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. I believe you will benefit from the portfolio years later when you need to review the learned subjects for advanced courses or professional engineer licensure exam.

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.** I appreciate all effort to attend 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.

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 hour, 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 textbook chapter to be discussed prior to the scheduled class and review the subject thoroughly after the class. **Read the textbook, all the material and derivations are explained thoroughly.** Work on all examples given in the text and solve as many unassigned problems as you can. Expect to spend 8 to 10 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](#).

A student who has any mobile communication device out during an exam or quiz will be considered to be engaged in academic dishonesty and receive a 0.

Hats must be taken off during exams and quizzes.

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

Day	Week	Date	Number	Chapter	Class Overview	Homework Due at Midnight
Wednesday	1	7/9	1	1		
Thursday	1	7/10	2	1	Quiz Chap 1 (1)	1
Friday	1	7/11	3	2		
Monday	2	7/14	4	2	Quiz Chap 2 (2)	2
Tuesday	2	7/15	5	3	Quiz Chap 2 (3)	
Wednesday	2	7/16	6	3	Quiz Chap 3 (4)	3
Thursday	2	7/17	7		EXAM 1 (Chap 1, 2, 3)	
Friday	2	7/18	8	4	Exam1 Review	
Monday	3	7/21	9	4	Quiz Chap 4 (5)	4
Tuesday	3	7/22	10	5	Quiz Chap 5(6)	
Wednesday	3	7/23	11	5	Quiz Chap 5(7)	5
Thursday	3	7/24	12	6	Quiz Chap 6(8)	
Friday	3	7/25	13	6	EXAM 2 (Chap 4, 5, 6)	
Monday	4	7/28	14		Exam 2 Review	6
Tuesday	4	7/29	15	9		
Wednesday	4	7/30	16	10	Quiz Chap 9(9)	9
Thursday	4	7/31	17	10	Quiz Chap 10(10)	
Friday	4	8/1	18		EXAM 3 (Chap 9 and 10)	10
Monday	5	8/4	19	All	Review Exam 3 and Class review	
Tuesday	5	8/5	20	FINAL	FINAL EXAM	1,2,3,4,5,6,9,10

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances.

To register for CE 2375 Fluid Mechanics:

1. Go to <https://mlm.pearson.com/enrollment/chavez36095>
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.
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: chavez36095

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.