

THE UNIVERSITY OF TEXAS PAN-AMERICAN

College of Engineering and Computer Science

Department of Mechanical Engineering

MECE 3115 Fluid Mechanics Laboratory – Summer II 2015

Room: ENGR 1.470

Time: MTW 12:00 PM – 3:00 PM

Instructor: Samantha Ramirez

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Website: <http://faculty.utpa.edu/sjsalinasz>

Office: ENGR 3.216

Office Hours: N/A

Course Pre-requisites: Credit for or enrollment in MECE 3115 Fluid Mechanics

Pre-requisite Knowledge:

- Derivatives, integrals, and their applications.
- Use of computer spreadsheets.
- Basic measurements and instrumentations.

Lab Equipment:

- Lab handouts from website
- Safety glasses
- Permanently bound gridded notebook (Composition notebooks preferred)
- Appropriate lab clothing

Topics:

- Viscosity Measurement
- Bernoulli's Principle
- Instrumentation and Calibration
- Pipe Flow
- Closed and Open Channel Flow

<u>Grading Policy:</u>	Lab Reports	60%
	Lab Notebook	20%
	Quizzes	10%
	Attendance	10%

Grades:

- You will have a total of 7 lab reports to submit. Each report should follow the designated lab report format found on my website. Unless otherwise informed, lab reports are due 1 week from the completion of the lab and are to be handed in within the first 10 minutes of the laboratory meeting.
 - Make every effort to turn in the lab reports on time. Once you get behind, it can be very difficult to catch up. Lab reports submitted late will have the score reduced by 20 points per day. Lab reports submitted more than 5 days late will not be accepted for credit and you will receive a 0 for that lab. **NO EXCEPTIONS.**
- You are required to scan and submit a PDF or .docx of your lab notebook entry for the day on Blackboard by Thursdays at 11:59 PM. Do not submit pictures (JPEG, PNG, etc). Your notebook will be graded on Blackboard.
- You will be taking daily quizzes covering the lab procedures on Blackboard Learn before beginning your lab.
- Attendance and participation in laboratory sessions are **mandatory**. Any student with more than 1 absence will be dropped from the class. No credit will be given for laboratory reports from missed laboratory sessions without an excused absence.

Course Evaluation:

Mandatory Course Evaluation period: Students are required to complete an ONLINE evaluation of this course, accessed through ASSIST via your UTPA account (<https://my.utpa.edu/>); you will be contacted through email and ASSIST with further instructions. The evaluation window closes the last day of Summer II classes. Students who complete their evaluations by the last class day will have priority access to their grades.

Plagiarism:

Any instance of cheating or plagiarism will result in **loss of credit** for the work, and will be reported to the Chair of the Mechanical Engineering Department and/or the Dean of Students for appropriate action which may include **loss of credit** for the course or **dismissal** from the University.

Drop Policy:

Students can withdraw from the course through the *Office of the Registrar* on or prior to:

- July 20, 2015: Fourth class day (Census date), courses dropped by this date do not count toward six course drop limit.
- July 24, 2015: Last day to change course to non-credit.

American Disabilities Act Statement:

If you have a documented disability which will make it difficult for you to carry out the work as I have outlined and/or if you need special accommodations/assistance due to a disability, please contact the Office of Services for Persons with Disabilities (OSPD), Emilia Ramirez-Schunior Hall, Room 1.101 immediately, or the Associate Director at MAUREEN@UTPA.EDU, 316-7005. Appropriate arrangements/accommodations can be arranged.

Acknowledgement of Syllabus & Bronc Honor Code:

There are two quizzes in Blackboard that you must take. The first is to acknowledge that you read and understand the syllabus for this class. The second is to state that you will abide by the Bronc Honor Code. These quizzes need to be completed by Monday July 20 at 11:59 PM.

Course Outcomes and Assessment:

The student should be able to

1. Understand the basis for common material behaviors.
2. Perform and utilize general techniques of measurement.
3. Perform basic statistical analysis.
4. Write technical memos or technical laboratory reports.
5. Read, interpret, and apply industrial or voluntary standards.
6. Function in a single or multi-disciplinary team.
7. Adhere to basic laboratory safety guidelines.
8. Record information in a technical laboratory notebook.

	1	2	3	4	5	6	7	8	S1	S2	S3	E1	E2	E3	E4	E5
1		X												X		
2		X													X	
3											X					
4					X										X	
5							X									X
6				X	X											
7						X										
8					X										X	

Mechanical Engineering Program Educational Objectives

The educational objectives of the Mechanical Engineering Program at the University of Texas Pan-American are to produce graduates who have:

1. the knowledge and technical skills required to be and to remain productive in the field of mechanical engineering.
2. an understanding of the importance of professionalism, ethics, safety, and socioeconomic concerns in resolving technical problems.
3. the capability of functioning in diverse environments.

Educational Outcomes

It will be demonstrated that the student:

1. is able to use knowledge of mathematics, basic sciences and engineering to analyze (identify, formulate, and solve) problems in mechanical engineering.
2. is able to design and conduct experiments and interpret results.
3. is able to design mechanical devices, systems or processes that meet given specifications.

4. is able to function in multi-disciplinary teams.
5. is able to communicate ideas effectively in graphical, oral, and in written media.
6. understands the professional responsibility of an engineer and how engineering solution impacts safety, economics, ethics, politics, and societal, cultural, and contemporary issues.
7. understands the need for lifelong learning to keep abreast of current practice.
8. is able to use state of the art computational hardware and software for analysis, design, and documentation (techniques, skills, and modern engineering tools necessary for engineering practice).

Fundamentals in Science and Mathematics

It will be demonstrated that the student has the:

1. knowledge of chemistry and calculus-based physics with depth in at least one.
2. ability to apply advanced mathematics to problems involving thermal and mechanical systems.
3. ability to apply statistics and linear algebra to problems involving thermal and mechanical systems.

Fundamentals in Engineering

It will be demonstrated that the student has the ability to:

1. create and annotate two-dimensional drawings, and generate three-dimensional computer based on solid models of technical components.
2. design and analyze components and systems for mechanical and energy performance.
3. specify and evaluate materials and manufacturing steps for mechanical components.
4. conceive and conduct experiments to measure the performance of materials, components and systems, and to communicate the results.
5. acquire new skills and specialized knowledge from published sources.