Syllabus

Day/Time and Room: MW 1:40-2:55pm, LSE B04
Instructor: Jeff Heys
Office Hours: M 3:00pm - 4:00pm, W 9:15am - 11:15am (or by appointment)
Office: ERC 287
Phone: 480-965-0874
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TA: Brad Merchant, ERC 356, bmerchan@asu.edu

Course Objectives:

• Students will be able to use mass, momentum, and energy balances to analyze and/or design static and dynamic fluid systems.
• Students will be able to design experiments to determine fluid properties.
• Given experimental data, students can determine the values of the various fluid properties.
• Students can use differential mass, momentum, and energy balances to determine velocity and temperature profiles in flow systems.
• Students can use macroscopic mass, momentum, and energy balances to determine mass flow rates, velocities, pressures, and/or temperatures of dynamic fluid systems.
• Students understand the importance of dimensional analysis and use dimensionless groups to scale-up fluid systems.
• Students can describe and analyze various flow measurement techniques.

Prerequisites: CHE 211, MAT 271

Required Text:


Course Web Page: http://www.asu.edu/courses/che331

Grading: The final grade will be computed as follows:

1. Homework: 20%
2. Midterm Exams: 50% (25% each)
3. Final Exam: 30%

While class participation is not a requirement, it is encouraged, and it may help with borderline grades.
Homework:

- There will be approximately 10 homework assignments throughout the semester (there are 15 weeks in the semester). Homework will be due at the beginning of class, and the late penalty is 25% per day.
- You are allowed and encouraged to work together on homework. However, you should write up your own solutions.
- Each homework problem will be graded on the three point scale. The first two points are given for technical accuracy (i.e., getting the correct answer), the third point is given for clear communication of the solution and method.
- The following scale will be used to grade each problem:
  - 3 pts a solution that is clear, well organized, easy to read, and entirely correct,
  - 2 pts a solution that is entirely or mostly correct,
  - 1 pts a solution that is incorrect and does not meet expectations,
  - 0 pts either no attempt or an attempt that is entirely incorrect and does not communicate any understanding of how to solve the problem.
- You must receive a score of 67% or higher on the homework to pass the course.
- If you receive a 1 or a 2 on a problem, you may redo the problem and turn it in the next week.

Homework Format:

- It is absolutely essential that you be able to communicate clearly and write neatly if you plan to work as a professional engineer.
- Problems should generally be started on a new page, but you may have up to 2 problems on a page (1 problem on each half page).
- Do not write on the back the paper.
- Any diagrams or pictures should be neatly drawn and clearly labeled.
- Your solution should be easy to follow from the first line to the last – do not put calculations off to the side!
- Box your answers — no box = no answer = no points
- If you turn in unreadable, messy, unclear, unreadable homework I will return it ungraded. Of course, if you turned that stuff in to your boss you would be downsized.
- The homework pages must be attached to another, preferably with a staple.