

# ME 433 Exams and Quizzes, Spring 2024

Prepared by Professor J. M. Cimbala, Penn State University. Latest revision: 15 April 2024

## Equation Sheet

- The **Equation Sheet** for the whole course is posted here as a pdf file, [Equation\\_sheet\\_ME433.pdf](#). You should study this equation sheet before a quiz or exam to familiarize yourself with the layout in order to avoid time searching for equations while taking the quiz or exam.
- The equation sheet will be updated/modified as necessary throughout the semester.
- The equation sheet is also a useful reference for homework and for study and for future use.

## Quizzes

- Due to the hybrid format of this class, there are **no midterm exams**. Instead, **a short quiz is provided after most lessons**. [Lessons are based on **topic** rather than **time**. Instead of a 50-minute lecture, each lesson is typically under 20 minutes. If a topic takes more than 20 minutes, it is split into shorter parts.]
- Not all lessons have a quiz, but you can expect 4 to 6 quizzes per week with a total of 70 quizzes throughout the 15-week semester.
- **Each individual quiz is worth 1% of your final course grade, but you can drop the lowest 10 quiz scores.** In total, quizzes are thus worth 60% of your final course grade.
- All quizzes are taken **online in Canvas**. Your score appears on Canvas out of 100 points per quiz.
- Most quizzes are **open-book, open-notes**. You may use calculators and computer software (Excel, Matlab, EES, ...). Some **qualitative quizzes** (terminology and concepts), however, are **closed-book, closed-notes**.
- A typical quiz is composed of one numerical completion question, testing your knowledge of the lesson material to which it is affiliated. Here is how it works:
  - View the lesson videos on Canvas or directly on YouTube.
  - Attend class. I will quickly review a couple lessons and then solve some more example problems.
  - Take the quiz associated with each lesson.
  - If you do not get the correct answer(s), you can re-take the quiz **up to 4 times**.
  - Your final score for the quiz is the average of all your attempts. In this way there is built-in partial credit:
    - Get it correct the first time: 
$$= 100$$
    - Get it wrong the first time but correct the second time: 
$$(0 + 100) / 2 = 50$$
    - Get it wrong the first two times but correct the third time: 
$$(0 + 0 + 100) / 3 = 33.33$$
    - Get it wrong the first three times but correct the fourth time: 
$$(0 + 0 + 0 + 100) / 4 = 25$$
    - Get it wrong all four times: 
$$(0 + 0 + 0 + 0) / 4 = 0$$
    - **NOTE:** Suppose you get the answer wrong the first time (0) but take it 3 more times after you figured out how to do it correctly (with different numerical answers each time, of course). Then you can improve your grade from a 0 to a 75! 
$$(0 + 100 + 100 + 100) / 4 = 75$$
  - **The deadline for taking a quiz is midnight** (actually 11:59 pm to avoid confusion) **of the Tuesday of the week after the week in which that lesson is provided**. For example, all quizzes for lessons covered in Week 1 must be completed by Midnight Tuesday of Week 2.
- To discourage cheating, some of the numerical values are randomized and are therefore different for each student *and* for each time a student re-takes the quiz.
- **Hint 1: Be careful with units**, especially factors of 1000 (J vs. kJ, mg vs. g vs. kg, etc.), typically one of the most common mistakes. It would be a shame to get an incorrect answer because of improper unit conversions.
- **Hint 2:** You are **strongly** encouraged to perform your calculations in Excel, Matlab, EES, or other software. As the semester rolls on, you will find yourself building on to previous calculations; portions of these calculations will then be useful for other quizzes, for homework, and for the final exam.

## Midterm Exams

- The quizzes replace midterm exams. Thus, **there are no midterm exams**.

## Final Exam

- The **Final Exam** will be online. **Start and end times for the final exam: Tues. April 30 at 12:01 am** (midnight between Mon. and Tues.) **until Thursday May 2 at 11:59 pm** (midnight between Thurs. and Fri.).
- You will have 3 hours to take the final exam; this should give you plenty of time.
- The final exam is **comprehensive**, covering material from the entire semester.
- The final exam is graded out of 100 points and is worth 19% of your final course grade.
- You are strongly encouraged to use software to avoid calculator errors. **Always check your units!**
- The final exam will consist of 10 questions, 10 points each. **The questions will be similar to the quizzes**. More details are provided on the **Final Exam Instruction Sheet** to be posted on Canvas.