

AME 20216 – Lab I

Spring 2018

Instructors

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Course Website: <http://www.nd.edu/~prumbach/AME20216>

Course Description

This course will focus on measurements, data analysis, and technical writing. In the first half of the course, we will learn about the instrumentation and electronics commonly used in aerospace and mechanical engineering applications. The second half of the course will focus on the statistical analysis and interpretation of data.

Course Materials (available at the Hammes bookstore)

- *Measurement and Data Analysis for Engineering and Science* by Patrick F. Dunn
- Official “AME20216 – Lab I” lab notebook (**required**)

Grading

- 15% Homework Assignments (3 total) and Article Reviews (2 total)
- 10% Lecture Final Exam
- 5% Lab Final Exam
- 10% Pre-lab Quizzes (12 total)
- 10% Lab Notebooks
- 20% Lab Reports (2 total)
- 30% Technical Memos (8 total)

Lab Participation - There will be 12 labs throughout the semester. You are required to perform *all* of the labs. Failure to perform a lab will result in an incomplete grade for the course. Labs will be graded based on written lab notebooks, printed plots, and lab reports. You may only use data that you measured during lab. Reporting data collected by other students will be considered plagiarism, unless properly cited and specifically approved by the lab instructor.

Full Lab Reports – Lab reports must be consistent with the templates/examples on the Resources page of the course website. Students must print the score sheet and attach it to their report.

Brief Technical Memos – For weeks when a full lab report is not due, students are required to turn in a series of plots and other deliverables listed at the end of the lab handout. Every plot, schematic, or table should have a concise and descriptive caption. You should also include 1 – 3 paragraphs describing the deliverables. Any theoretical curve shown on a plot must have its equation included in the paragraph (not in the caption). Students must print the score sheet and attach it to their deliverables.

Exams

- The **Lab Final Exam** final exam will take place the last week of the semester during your regularly scheduled lab.
- The **Lecture Final Exam** will be on Tuesday, **May 8th at 10:30 a.m.** (as dictated by the registrar).

Rules, Policies, and Procedures

Phones and Laptops

Phones and laptops offer a huge distraction and can seriously handicap your learning. Therefore, phones are forbidden in lecture or lab. They should be turned off and put away. Laptops are not allowed in lecture, but you may use them in lab.

Academic Honesty

Lab deliverables are to be turned in the following week at the beginning of lab. Homework assignments are to be turned in at the beginning of lecture on the date they are due. Feel free to talk and work with each other on the assignments *in person*, but direct electronic transfer of code or written work is strictly forbidden! This will be considered a violation of the academic honor code and dealt with accordingly.

Tardiness

- Assignments handed in late will receive a 30% deduction compounded daily.
- Showing up late for lab will result in a 50% deduction from the lab notebook score.
- Lab instructors and TAs will not stay beyond the allotted time to make up for a student's tardiness. Tardy students will forfeit points for any data left uncollected due to time constraints.

Re-grades

- Re-grade requests are not merely a vehicle for obtaining a better score. Rather, they are a means for ensuring fair and equitable grading. Additional points may be deducted if the lab instructor or TA notices any mistakes they may have missed during the initial grading.
- Re-grade requests must be submitted in writing to *both* the TA and Prof. Rumbach on a single email. Students must scan their assignment and write a succinct explanation of the perceived mistakes in grading.
- After graded assignments have been returned, students have **no more than one business day** to submit a re-grade request.