AME 20216 – Lab I
Fall 2021

Instructors

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Office hours: Monday and Wednesday 1pm – 2pm via Zoom!

Graders

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Lab Section TAs

Mon. 3:00 – 5:00 – Ibu Akintola, iakintol@nd.edu
Tues. 1:00 – 3:00 – Philip Andrews, pandrew2@nd.edu
Tues. 3:30 – 5:30 – John Yost, jyost4@nd.edu
Weds. 3:00 – 5:00 – Thomas Hintz, thintz1@nd.edu
Thurs. 11:00 – 1:00 – Cody Cochran, ccochra4@nd.edu

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 the basics of 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

- *Undergraduate Lectures on Measurements and Data Analysis* by Paul Rumbach available at Hammes Bookstore or online at Amazon dot com.
- Official "AME20216 – Lab I" lab notebook (**REQUIRED**) available at Hammes Bookstore.

Grading

- 5% Online Participation (watch the videos on Sakai)
- 36% Technical Memos
- 10% Homework Assignments and Article Reviews
- 12% Solar Panel Report
- 10% Pre-lab Quizzes
- 10% Lab Notebooks
- 11% Lecture Final Exam
- 6% Lab Final Exam

IMPORTANT: All lab reports and tech memos must be saved as PDFs and submitted online via the "Assignments" tab on Sakai. It is *your* responsibility to make sure it uploads correctly. (i.e., Use the "Preview" button to check your submission.) Any technical difficulties must be immediately reported to Prof. Rumbach and University OIT.

Academic Honesty

- Homework assignments, tech memos, lab reports, plots, schematics, and all other deliverables are to be created individually. Electronic transfer of any student work is strictly prohibited.
- You may NOT copy and paste any content from the lab handout or any other student's lab report or tech memo, past or present.
- 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.
- Lab deliverables and homework assignments must be submitted as PDF files to the correct portal on Sakai. **Any technical difficulties must be reported immediately to University OIT.** Intentionally corrupting files or lying about technical difficulties is considered a severe violation of the academic honor code.

Make-up Labs

- Laboratory equipment is swapped out every Friday. Once the equipment is put away, it will not be taken back out for make-up labs.
- If you know you will miss lab due to a university excused absence, you must contact the lab instructor at least 4 days prior to the start of your regular lab to schedule a make-up.
- If you have an emergency, you must contact the lab instructor as soon as possible to schedule a make-up lab.
- Make-up labs will only be scheduled after an official excused absence letter from the University is presented to the lab instructor.
- Failure to schedule and perform a make-up lab within the time frame outlined above will result in a zero for that week's deliverables.

Full Lab Reports – Lab reports must be consistent with the templates/examples on the Resources page of the course website.

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).

Exams – There are *two* separate exams in this course.

- 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 **Wednesday, December 15 from 7:30 – 9:30pm.**

Lab Rules

1. **Leave the equipment as you found it.**
    a. Disconnect all wires and cables.
    b. Return resistors and capacitors to the proper bin.
    c. Disassemble any experimental apparatus that you may have built.
2. **Tech memos, lab reports, plots, and other deliverables are to be produced individually.**
3. **No cell phones in lab.**
4. **No food or drink in lab.**
5. **Wear safety glasses, lab coats, and/or closed toed shoes when specified by the lab instructor.**
6. **Read the handout before lab.**
7. **The instructor must sign your lab notebook before you leave.**
8. **Show up to lab on time.**
9. **No make-up labs unless you present the instructor with an official university excuse.**

More 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.

Tardiness and Late Assignments

- Assignments handed in late will receive a 30% deduction each day it is late.
- The graders will grade whatever file they find on Sakai, and it is your responsibility to make sure your files are uploaded correctly. You must preview your assignment after it has been uploaded, and any technical difficulties must be reported immediately to University OIT and Prof. Rumbach.
- Showing up late for lab will result in a 50% deduction from the lab notebook score.
- Showing up more than 20 minutes late will result in a zero for the lab notebook score, and late students will perform the procedure individually.
- 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

If you think your assignment was graded unfairly, you may submit a re-grade request within 5 business days of the graded assignment being returned. The procedure is as follows:

1. Print out a new copy of the assignment and a new score sheet.
2. Take the new copy and the original graded assignment and slide it under the door of Prof. Rumbach's office in 363 Fitzpatrick. (The original is necessary to make sure you did not change anything.)
3. Prof. Rumbach will re-grade the newly printed assignment, post your new score to Sakai, and place the re-graded assignment in the return box by the elevators.

NOTE: If the grader added up points incorrectly, please see Prof. Rumbach during office hours or at the end of lab or lecture.