

AME 20216 – Lab I Fall 2020

Instructors

Paul Rumbach
prumbach@nd.edu
363 Fitzpatrick

John Ott
jott@nd.edu
B14 Fitzpatrick

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

Graders

Zareb Noel, znoel@nd.edu
Laura Alderfer, lalderfe@nd.edu
John Yost, jyost4@nd.edu

Lab Section TAs

Mon. 3:40 – 5:40 – Daniel Martin, dmarti25@nd.edu
Tues. 1:00 – 3:00 – Qiushi Zhang, qzhang12@nd.edu
Tues. 3:55 – 5:55 – Cody Cochran, ccochra4@nd.edu
Weds. 3:40 – 5:40 – Ibukunoluwa Akintola, iakintol@nd.edu
Thurs. 11:10 – 1:10 – Arjun Tandon, atandon@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 (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

- 5% Online Participation (watch the videos on Sakai)
- 32% Technical Memos (8 total)
- 15% Homework Assignments (3 total) and Article Reviews (2 total)
- 12% Solar Panel Report
- 10% Pre-lab Quizzes (11 total)
- 10% Lab Notebooks
- 10% Lecture Final Exam
- 6% Lab Final Exam

COVID-19 Health and Safety Protocols

1. Students must immediately wash their hands upon entering the lab.
2. Students must put on nitrile gloves after washing their hands.
3. Students must wipe down their lab bench and equipment with alcohol wipes after performing the lab.
4. Facemasks that completely cover the nose and mouth will be worn by all students and instructors while in B14 Fitzpatrick Hall of Engineering.
5. Students must choose a lab station, record the station number at <http://here.nd.edu/seat>, and use that lab bench for the remainder of the semester.

COVID-19 Special Policies

What to do if you fail the Daily Health Check:

1. Email a screenshot of the red card to Professors Rumbach and Ott.
2. Go get tested. Let Professors know the results as soon as possible.
3. If you are COVID Positive: Equipment will be sent to you in Quarantine via campus mail.
4. If you are COVID Negative: Email Prof. Rumbach to schedule a make-up lab A.S.A.P.
5. If you miss more than 3 of the first 7 weeks while in quarantine, we recommend you drop the course.

Lab Participation - There will be 11 labs throughout the semester. 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.

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.
- Make-up labs will only be held during regularly scheduled lab times.
- 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. 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 administered online through Sakai on Thursday, **November 19th at 8:00 – 10:00 am**

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.

Academic Honesty

- Although data is collected in groups, lab reports, tech memos, plots, and all other deliverables are to be created individually.
- 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.

- 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.

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.
- 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.