

ME310: Instrumentation and Theory of Experiments
Spring 2023

LECTURE:	A2, M-W 12:20-2:05, EPC 209
LAB:	Rm 113, 110 Cummington Mall C1 (Tue 5:30pm – 9:15pm), C2 (Thurs 5:30pm – 9:15pm), C3 (Fri 8:00am – 11:45am), C4 (Fri 2:30pm – 6:15pm), C5 (Mon 2:30pm – 6:15pm), C6 (Wed 2:30pm – 6:15pm)
TEXT:	Figliola and Beasley, <i>Theory and Design for Mechanical Measurements</i> .
PROFESSOR:	Brian Walsh bwalsh@bu 110 Cummington, Rm 319 Office hours* Tuesdays, 9:00-11:00am, or by appointment
GSTs:	Haoyi Hou (haoyi@bu.edu) (C3, C5) Alexander Boyd (adboyd@bu.edu) (C1, C2) Arun Namiar (anambiar@bu.edu) (C1, C2) Brennan Brodt (brodt@bu.edu) (C2, C3) Lile Zhang (lilez@bu.edu) (C1, C6) Samad Amini (smdamini@bu.edu) (C4, C6) Van Naldoza (vnaldoza@bu.edu) (C1, C4) Zahra Zad (smdamini@bu.edu) (C3, C5)
GRADING:	5% (Class and Lab participation) 20% (Design Project) 15% (Homework Sets) 25% (Labs and Lab Reports) 35% (Two in-class Exams)

This is a lab-based course. The application is critical. If you fail to participate and turn in more than 2 labs, you will receive an *F* in the course. This is independent of your other course work.

HOMEWORK: Assignments will be announced in class and posted to Blackboard. Assignments will be submitted digitally through GradeScope. Late homework will not be accepted except in extreme circumstances, because late submissions delay the release of the solutions for everyone. It's the

* Office hours are the times I set aside specifically to be available for students in my courses. During these times, I will be in my office and ready for students to drop in with questions or topics they want to discuss. I enjoy working with students one-on-one and in small-groups, so I encourage you to drop by.

responsibility of the student to confirm they have appropriate access to Blackboard and GradeScope.

EXAMS: Two in-class exams will be held. Make-up exams will only be given in extreme situations. A "make-up" exam will be different from the exam given in the class and will possibly be live.

LABS: See "ME310_S23_Lab_Report_Policy.pdf" for a full description of expectations for Lab reports. If a lab is due on a week when you do not have a regularly scheduled lab section, the lab report must be handed into the ME office (room 101 of 110 Cummington Mall) in the labeled bin at the assigned due date and time.

DESIGN PROJECT: You will design and implement a complete transduction system to measure the frequency-dependent displacement of a damped mass on a spring. This will occupy roughly the final 5 weeks of laboratory meetings.

COLLABORATION:

A. Homework: Do it individually. Some group collaboration is permitted, but digital content (such as code or plots) may not be shared, and all parts must be written in your own words.

B. Lab reports: Also to be done individually. Pre-labs should be done individually. For some experiments, there will only be one copy of your raw data/results, which you must copy later for inclusion in your own reports. Your lab report should be a stand-alone document, and therefore you may not reference any section in one of your lab partners' reports.

C. Design project: This is a group collaborative project. It is anticipated there will be some division of labor. The team will hand in one report and each member will receive the same grade.

Failure to meet any of the above conditions could constitute plagiarism and will be considered cheating in this class.

ACCOMMODATIONS:

Accessibility. If you have or believe you might have a disability that requires accommodations, please contact the Office for Disability Services (ODS) at (617) 353-3658 to coordinate any reasonable accommodation requests. I will make every effort to accommodate such requests. It's the responsibility of the student to notify me of the accommodation at least one week prior to the first exam. For more information:

<http://www.bu.edu/disability/accommodations/>

Religious/Cultural Observance. Students who have religious/cultural observances that impede class attendance and/or conflict with due dates

should let me know in person and by email by the end of the 2nd week of the semester.

Mental Health and Well-Being: If you or someone you know is feeling anxious, overwhelmed, depressed, or otherwise in need of support, expert resources are available on campus. For help, please see <https://www.bu.edu/shs/behavioral-medicine/behavioral-resources/> .

ETHICAL RESPONSIBILITIES:

Cheating on homework, quizzes, exams, lab reports, project reports, or any form of assignment, may be a form of plagiarism and is an infringement of every code of engineering ethics. Plagiarism is a serious academic offense and should not be taken lightly. Understanding your ethical responsibilities is an integral part of becoming a professional. A copy of the Code of Ethics of engineers, promulgated by the Accreditation Board for Engineering and Technology (ABET) and the National Society of Professional Engineers, can be found on the main course web site.

Please recall that when you enrolled at Boston University, you agreed to an Academic Honesty Pledge. The Academic Conduct Code details your responsibilities as well as the results of code violations, and is posted at:

<https://www.bu.edu/academics/policies/academic-conduct-code/>

If you have questions about whether you should give credit to a source, you may ask me for advice.

ATTENDANCE, PARTICIPATION, AND CLIMATE:

Attendance and participation are very important in this course, and they correlate strongly with student success. Because your success is important to me, I encourage you to come to class prepared and to speak up: ask a question if something isn't clear; let me know if I'm going too fast (or too slow!); volunteer to answer a question even if you aren't sure of the answer.

We all have a shared responsibility to create a positive learning environment in the course. Honest and respectful dialogue, and listening attentively to each other, are important. Expression of different views, and even disagreement, is encouraged, but must be phrased in a respectful way. I will not tolerate hostility, personal attacks, or other forms of exclusionary behavior towards any member of the class. Some of the in-class activities and course assignments involve working in groups, and I expect each person to work towards creating a positive learning environment within their group.