

Physics 252L §1 (Summer 2022)
University Physics II Lab
North Dakota State University
1 Credit
In-Person & Online: Mondays and Wednesdays

Instructor: Alistair McInerny

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Office Hours: _____

Primary Text: Video laboratory theory and data collection provided through LON-CAPA system.

Secondary Text: Halliday, Resnick, Walker. *Fundamentals of Physics, 10th Edition*. Wiley, 2013.

Materials: Computer access to watch laboratory theory and data collection.

Laboratory Coordinator: Paul Omernik, South Engineering 110

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Phone: 231-7047

Bulletin Description: Electric charge, field, potential, and current; magnetic field; capacitance; resistance; inductance; RC, RL, LC and RLC circuits; waves; optics.

Course Objective: This laboratory course is designed to complement Physics 252 by providing videos of experiments to reinforce the theory and ideas developed during the lecture. By the end of the semester, students should have a good working knowledge of the concepts that were presented, be able to communicate these ideas effectively, and understand the importance of working in collaboration with their peers.

Class Expectations: Students are expected to watch *all* laboratory exercises. Reading the relevant material prior to watching each video will help greatly. Students are expected to treat the instructor and fellow students with respect.

This summer there will be no in-person meetings.

Class Procedure: Each experiment video will begin with a brief discussion of theory and ideas which are relevant to the lab, as well as an overview of the lab procedure. If you have read the lab material before class begins, your understanding of the theory and subsequent data collection will be enhanced.

If you have questions after reading the material and watching the theory and data collection, please feel free to contact me by e-mail or video if we can arrange it.

Assignments and Grading: I will grade your reports based on the demonstration of your knowledge of physics, your utilization of the scientific method, and your ability to communicate your objectives and findings, not on the error of your results. It is acceptable to have results which are what was expected, as long as you have a reasonable explanation as to why (detailed error analysis). Your grade will not depend directly on your results, as long as you work to get the best results that you can, and understand the relevant physics. If, during the course of your experiment, you suspect your results aren't correct, please inform me—often the problem can be corrected in class.

At the end of the semester, the fully-completed lab with the lowest score will be dropped from consideration in your final grade.

Your final grade in Physics 252L will be based on the following scale: A - 90% and above; B - 80-89%; C - 70-79%; D - 60-69%; <60%, F.

Lab reports that are late by less than a week are worth half credit. Lab reports more than a week late are worth zero points.

Attendance: Attending all lab exercises is mandatory. Make-up labs will be considered only in the case of emergencies and at the discretion of the lab instructor. Unless explicitly noted, assume class is occurring as scheduled.

Feedback: Students are invited to share any concerns they have about the course or their performance with the instructor at any time.

Labs: An approximate list of labs are as follows:

Lab 1	Electrostatics
Lab 2	Gauss' Law
Lab 3	Electrical Measurement I
Lab 4	Electrical Measurement II
Lab 5	The Oscilloscope
Lab 6	RC Circuits
Lab 7	Transformers
Lab 7	RL Circuits
Lab 8	RLC Circuits
Lab 9	Reflection, Refraction, & Total Internal Reflection
Lab 10	Geometrical Optics
Lab 11	Optical Instruments
Lab 12	Interference & Diffraction

Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact the Disability Services Office (www.ndsu.edu/disabilityservices) as soon as possible.

The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at www.ndsu.edu/academic_honesty.