

# Physics 1310 Lab

Spring 2022

Section 03/CRN 45294

<b>Class Time:</b>	Tuesday, 2:00-4:20 PM
<b>Class Location:</b>	Workman 115
<b>Instructor:</b>	Dylan Ward
<b>Contact Email:</b>	dylan.ward@student.nmt.edu
<b>Office:</b>	Workman 360
<b>Office Hours:</b>	Office hours by appointment.

## Course Description

Labs are an important part of your general physics courses. Doing these labs helps understand the concepts talked about in lecture. After completing this course, students will:

- Have a deeper understanding of the physical relationships described in lecture.
- Understand the experimentation process, including writing down a theory, making observations, and analyzing data.
- Develop the skills needed to write technical reports.

## Course Materials

Physics 1310 Lab manual (handed out during the first lab session and on Canvas), calculator, writing utensil, and paper.

## Policies

1. I expect you to be on time. I will give a short introduction to each lab in the beginning of class. If you are not there for the lecture, I will not repeat it for you.
2. Read the labs before coming to class. There are no pre-labs, but I might have everyone take a quiz.
3. For each day a lab report is late, there is a 10% deduction to the overall grade. After a week, it will become an automatic zero.
4. As a general rule, there will be no make-up labs for class missed beyond the end of that week. You need to bring any conflicts to my attention **at least one week in advance**, so I can arrange for you to attend another TAs section. Exceptions will be made for emergencies (see Attendance section).
5. Questions in class or out of class are always welcome! You can email me, stop by my office, or come to my OSL help session. When emailing me, please include your name, class, and section (or time). Please allow 24 hours for me to respond.
6. This syllabus is subject to change at the instructor's discretion. You are responsible for having read and understand everything listed in the syllabus.

## Attendance

Attendance is **mandatory** as well as a significant portion of your grade! I expect you to attend every lab session. One lab grade will be dropped at the end of the semester, to be used in case of emergencies or schedule conflicts. If you anticipate missing class, you must let me know at least one week in advance so that arrangements can be made for you to attend another lab section during that same week. Missing lab because of your job is not a valid excuse. If you anticipate an extended absence, please contact Theresa Kappel (theresa.kappel@nmt.edu) in the Office of Counseling and Disability Services, who will notify me of the accommodations you require.

## Grading

There will be a total of 12 labs (13 assignments) with only 4 lab reports (labs **1, 4, 7, 9**). The first 2 reports will have **2** drafts while the last 2 will only have **1** draft. Each report is worth 100 points and each worksheet is 50 points. For the first 2 reports I will make comments on the first draft and turn it back with a raw score. You then have a week to fix any mistakes and address any comments for your second draft. Only the score on your second draft counts towards your grade. You must also turn your first draft in with your final report otherwise your raw score becomes your final grade. For the final 2 reports there is only a final draft. Reports and worksheets are due one week after they are assigned at midnight. The four labs with reports you will turn the worksheet in with your raw data sheet, but the work done on your worksheet will not be graded and **any analysis done on the worksheet must be typed up in the report**. The other 10 labs you will be graded on the worksheet.

At the end of the semester, the lowest worksheet grade will be dropped, except for any automatic zero received. The dropped grade is **NOT** so you have a free day to skip class; it is simply to allow a cushion in case you have an emergency or pre-arranged absence.

If you type up your report in LaTeX, you will need to email me your LaTeX code to receive the 5 points extra credit. **Each report must contain the following:**

1. **Introduction:** Write several sentences that describe the purpose of the lab (consider what the lab is about and what you are trying to accomplish). *Do not copy straight from the Lab Manual!* (10pts)
2. **Methods:** A brief description of the lab set-up and procedures, including a sketch or photo of the lab apparatus (make sure to label it accordingly) (10pts).
3. **Data:** Include the raw data from the worksheet in this section, make sure to include units. (20 pts)
4. **Analysis:** Organize the data in clearly labeled tables and/or graphs. Show all equations and corresponding calculations with the correct units. Use words to explain what you are doing. Include your error analysis in this section of the lab report. Explain your results and compare them to those predicted by theory. Provide sources of error and explain how they can affect your results. *Make sure to answer any questions stated in the lab in complete sentences* (40pts).
5. **Conclusion:** Summarize some important results and data from the experiment. Tie to the purpose of the lab. Mention some sentences explaining what you learned from the lab and its relevance to the lecture material.
6. **Raw Data:** The data recorded during the lab on the Raw Data Sheet needs to be attached/stapled to the write-up. This is NOT considered the report itself. To receive full credit, the raw data has to be checked and signed by the TA before you leave the lab that day!
7. **Presentation:** I do not require a specific template, but make sure each section is clearly defined and all equations, graphs, and tables are neatly presented. **NO BULLET POINTS.**(10 pts)
8. **Draft:** You must include your first draft with your final lab report.

## Plagiarism

**Please turn in your own work!!** New Mexico Tech's Academic Honesty Policy can be found in the Undergraduate Catalog on the NMT website, and it will be strictly enforced in this lab. You are responsible for knowing, understanding, and following this policy.

Labs are a group effort and I encourage you to discuss them with each other, but plagiarism will NOT be tolerated. Data obtained during the lab session will be the same within each group, as well as some of the data analysis (tables, graphs, etc.), but all other sections of the lab report *must be your own work*. Any suspicion of a violation of the letter or intent of the NMT policy will be reported to the Lab Director, who will determine the appropriate charges to bring to the office of the Dean of Students. *If in doubt, please ask me for clarification before submitting any work as your own*. Do not turn in anything that is not from your own mind without giving due credit. This includes the lab manual!

## Counseling and Disability Services

New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services (OCDS). The confidential services are provided free of charge by licensed professionals. New Mexico Tech is

also committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. To schedule an appointment with a counselor, email [counseling@nmt.edu](mailto:counseling@nmt.edu) or call (575) 835-6619. Students with emergencies can be seen immediately during regular office hours Monday - Friday 8:00 am to 5:00 pm.

## **TITLE IX**

*"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."*

*-Title IX of the Education Amendments of 1972*

New Mexico Tech teaching assistants are mandated Title IX reporters. This means that if we are told of an incident of sexual misconduct, we are required by law to report the incident to New Mexico Techs Title IX Coordinator. The University's Counseling & Disabilities Office on the 1st floor of the Fidel Center is the only location on campus where disclosures of sexual assault may be made confidentially to a counselor. The only exceptions to the faculty members reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, as part of a university-approved research project, or if the disclosure were to occur at an open, campus-wide event (e.g. Take Back the Night testimonial). The University cannot initiate an investigation without the consent of the victim. New Mexico Techs full policy on Title IX is available at <http://www.nmt.edu/titleix/>.

## **Campus Police**

In case of emergencies, it is a good idea to save the campus police phone number in your contact list: (575) 835-5435

\*\*I reserve the right to implement changes to this syllabus if required during the semester.