

Physics 122 Lab

Syllabus

FALL 2019

Instructor: Dana Baylis-Aguirre

Time and Location: Tuesday/Thursday: 2:00-4:30 pm, Workman 107

Contact: email: Dana.Baylis@student.nmt.edu

Office Hours: By appointment, Workman 327

OSL Tutoring Hours: Tues/Thurs 10-11

Overview and Objectives

Lab is a crucial part of your general physics course. It provides the opportunity to interact with the physics of the world around you.

Students will:

- Have a deeper understanding of physical relationships described in lecture.
- Understand the process of experimentation: Write down a theory, make observations, and analyze data.
- Develop the skills to write technical reports.

Required Materials

- Physics 122 Lab Manual

Recommended Materials

- Lab notebook–You can use a notebook to record and analyze your experiments (this makes writing them up easier).
- straight edge, colored pencils, calculator

Attendance and Participation

Attendance is **mandatory** and is a significant portion of your grade. No make up labs are allowed. I drop the lowest worksheet grade (see grading section), if you have a scheduling conflict (such as a conference) you need to inform me **well in advance**. If your absence is due to an emergency, I will require proof (such as a doctor's note), and you may make up the lab by attending another section, as long as you have both my permission and permission from that lab's TA. *Note: holidays DO NOT count as scheduling conflicts.*

Collaboration

Working together can be a highly effective way to learn and is strongly encouraged. However, **each** student must do his/her own analysis and lab report. **Please turn in your own work!** Labs are a group effort but plagiarism will not be tolerated and will be dealt with according to New Mexico Tech standards. Data obtained during lab session will be the same within each group, as well as some of the data analysis, but all other sections of the lab report *must be your own work*.

Academic honesty. New Mexico Tech's applicable policy regarding academic honesty is expressed in the NMT Undergraduate Catalog (**page 79**), and it will be strictly enforced. You are responsible for knowing, understanding, and following this policy.

Laboratory exercises are a group effort and discussing the material with each other is encouraged. Data obtained during the lab session is expected to be the same within each group (tables, graphs, etc.). However, your written assignment must be your own work, and plagiarism is not tolerated. Any suspicion of a violation of the letter or intent of the NMT policy will be reported to Lab Director, who will determine the appropriate charges to bring to the office of the Dean of Students.

In general, obtaining answers that in any way bypass the need to think about the assignment is a violation of the academic honesty policy and can have serious consequences. **If in doubt, please ask your instructor before submitting any work as your own.**

Grading/Assignments

Assignments

This semester we are implementing a new assignment scheme. There are 13 labs all of which will have worksheets and there will only be 4 lab reports (labs **1, 5, 8, 11**). The first 2 reports (labs **1,5**) have **2** drafts, while the last 2 report (labs **8, 11**) have **1** draft. 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. If you receive an 85% or higher on your first draft you do not have to turn in the second draft. 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 at the beginning of lab the week the following week. 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.

1. At the beginning of the report, include the name of the lab, your name, the TA's name, the date, and the names of all your group members.
2. Raw Data and Worksheet: Each report must contain the raw data, with the TA's signature (these count as your attendance grade as well), as well as the worksheet. (10 pts)

3. 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 FROM THE MANUAL!!!** (10 pts)
4. Methods: this section should be a brief description of the lab set-up and procedures. (10 pts)
5. Data: include the raw data from the worksheet in this section, make sure to include units. (10 pts)
6. Analysis: Organize the data in clearly labeled tables (when necessary), and include any graphs (which also must be clearly labeled!). Any plots that include best fit curves must include the equation of the line or curve that is being fit to your data. Include your error analysis in this section of the report. Discuss your results and compare them to your theories and predictions. Provide sources of error and explain how they can affect your results. *Make sure to answer any questions stated in the lab, with COMPLETE sentences.* (40 pts)
7. Conclusion: Write a small paragraph discussing the results of your experiment(s) and **describe the physics that you learned.** (10 pts)
8. 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. (10 pts)
9. **Draft: You must include your first draft with your final lab report.**

Lab reports will be graded on these criteria.

Grading

Lab reports will be graded on the stated requirements in the previous section. At the end of the semester I will drop your lowest **worksheet** grade; **you cannot use your drop grade on a lab that has a report.** This does NOT mean that you have a “freebie”; it simply allows for some cushion in case you have an emergency and have to miss lab. Each worksheet will be worth 50 points, and every report is worth 100 points. The lab score is reduced by 10% for every day it is turned in late; I will not grade lab reports that are more than a week late.

Classroom Policies

Please be respectful of those working around you—please leave your cell phone on vibrate. Feel free to bring coffee, water, etc. If you have to bring food try to keep it small and simple; if not please step into the hall to eat.

Reasonable Accommodations and Counseling Services

New Mexico Tech is 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, please call 835-6619.

New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.

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