

PHYS 151 Lab Syllabus and Schedule Fall 2020

All course information is posted on Blackboard

Course Information

PHYS 151, sections A and B, Fall 2020 [1 credit hour]

Course title: Physics Laboratory

Meeting location and time: Blackboard Collaborate Ultra; M 9:00-10:50 (section A); M 2:00-3:50 (section B)

Instructor Information

Teaching Assistant Section A: Sarah Choate (a1876609@mail.niu.edu)

Teaching Assistant Section B: Gabriela Arriaga (a1688545@mail.niu.edu); help room hours are Friday 9:00-10:00

Professor: Dr. Coutrakon (gcoutrakon@niu.edu)

Course Description

Selected experiments designed to accompany PHYS 150. One two-hour laboratory per week.

Lab Delivery

Because we cannot perform the labs in person we will use two different methods in order to maintain as much of the hands-on component of the lab as possible. Some of the labs will be done entirely through simulations which can be found on the website <https://phet.colorado.edu/> or by simply searching for PhET simulations. The experiments that cannot be done through simulations will have videos filmed of the experiment and data taken by the TAs which will be distributed. Some labs may require a mix of videos and simulations.

Lab Report

Lab Handouts - Available on Blackboard

The PHYS 151 lab sessions include a pre-lab which will be available in a separate document on Blackboard under the corresponding lab header.

Submission of Lab Reports (Weekly)

Students will have one week to complete their lab reports after doing an experiment. Prior to the lab meeting for an experiment, the prelab must be submitted, if applicable. For example, on the schedule from page 4, week 7 has the 1D and 2D motion report due but there is a prelab for the experiment being done, the Newton's third law lab. So, when you turn in the 1D and 2D motion report, also turn in the Newton's third law prelab.

Students **must** upload their lab report to Blackboard, which uses the SafeAssign system. Let your TA know as soon as possible if you have any troubles with the submission (good reason to finish early!). **It is your responsibility to ensure that the lab report was received**, not the TA's, so if there is any doubt that it was submitted, email the TA. **If you are not getting feedback and grades on your labs, email the TA and/or the professor ASAP.**

Reports are due on the Sunday after that lab occurs at 11:59 pm and prelabs are due on the Sunday before the meeting for that experiment also at 11:59 pm.

1. Each week late will be a 10% deduction up to 2 weeks late.

2. Reports received more than two weeks late will not be accepted.
3. The last couple of reports may only allow for one week late or may not be allowed to be handed in late at all in order to have final grades ready on time.

If something comes up like an illness or a family emergency and you are unable to either make it to lab or hand in the report on time, you must email the TA in advance. Note: Documentation may be required. Missing lab will result in 0 points.

Grading of Lab Reports (out of 100 total possible points)

Grading Scale

A	100%	-	93%
A-	92%	-	90%
B+	89%	-	87%
B	86%	-	84%
B-	83%	-	80%
C+	79%	-	77%
C	76%	-	74%
C-	73%	-	71%
D	70%	-	61%
F	60%	-	0%

Lab Policies Include:

1. The instructor and the university reserve the right to modify, amend, or change the lab syllabus (course requirement, grading policy, etc).
2. If you feel there was an error in the grading of a lab report, discuss your specific questions with your TA and, if you are still unsatisfied, please contact the instructor. It is your responsibility to bring this to the TA's and/or professor's attention as soon as possible; complaints received months after-the-fact or after final grades are in will be given much less weight than those brought to our attention immediately.

Lab Report Format/Rules

1. Academic Honesty: You may discuss the experiment with others in the class which can help you understand the results. **However, you should record your own data, and the lab reports that you turn in must be your own work in your own words. You cannot copy or paraphrase ANY portion of another student's report and doing so will be considered plagiarism. Please refer to the section on Academic Misconduct in the NIU Student Code of Conduct. It is available online at <https://www.niu.edu/conduct/process/index.shtml>**
2. Lab reports MUST BE TYPED: no hand written/scanned lab reports will be accepted.
3. Lab reports consist of the following sections:

Section 1: Title and name

1. Your name
2. Date of experiment
3. Lab section (PHYS 151 A/B)
4. Title of lab report

Section 2: Purpose

Brief statement about why you are doing the experiment and what you hope to learn.

Section 3: Theory

A brief discussion on the concepts that will be used in the lab. This is not copied straight from the manual, use your own words.

Section 4: Apparatus

List of any materials used for the experiment.

Section 5: Procedure

Write about what was done in the lab.

Section 6: Raw Data

Tables must have a title and appropriate units (meters, seconds, etc.) in header. Example:

Run	Mass (kg)	Amplitude (m)	Period (s)
1	0.050	0.0020	30.0
2	0.100	0.0037	32.4
3	0.150	0.0069	31.9

Table 1: Amplitude and periods as a function of mass

Section 7: Results

1. Use Excel or an equivalent to produce all graphs.
2. Graphs must be titled with labels and units on axes. Use captions whenever appropriate.
3. Show all equations that are used to produce the tables and graphs including any calculations that you do.

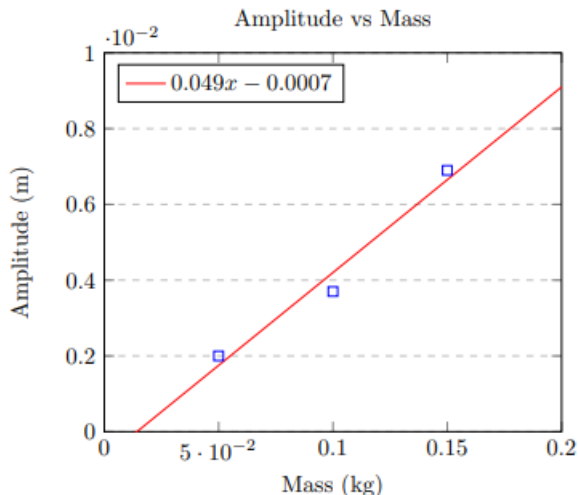


Figure 1: Amplitude as a function of Mass on a Spring

Section 8: Discussion

Answer the observation questions given in the lab manual. These answers should be complete sentences with justification for your answers. Each skipped question will be a deduction.

Points Breakdown for Reports

1. Prelab: 5 pts
2. Title: 5 pts
3. Purpose: 5 pts
4. Theory 15 pts
5. Apparatus: 5 pts
6. Procedure: 5 pts
7. Raw Data: 20 pts
8. Results: 20 pts
9. Discussion: 20 pts

Lab Schedule

	Date	Lab	Pre-Lab	Report Due (by Sunday)
Week 1	8/24/2020	Concept inventory, introduction		
Week 2	8/31/2020	Excel/Graphing lab		
Week 3	9/7/2020	Labor Day (university closed)		
Week 4	9/14/2020	How to Write a Lab Report		Excel/Graphing Lab
Week 5	9/21/2020	Push/Pull Lab	Push and Pull	
Week 6	9/28/2020	1D and 2D Motion	1D and 2D Motion	Push/Pull Lab
Week 7	10/5/2020	Newton's 3rd Law	Newton's 3rd Law	1D and 2D Motion
Week 8	10/12/2020	Friction Lab	Friction	Newton's 3rd Law
Week 9	10/19/2020	Specific Heat Lab	Specific Heat	Friction Lab
Week 10	10/26/2020	Coulomb's Law Lab	Coulomb's Law	Specific Heat Lab
Week 11	11/2/2020	Ohm's Law Lab	Ohm's Law	Coulomb's Law Lab
Week 12	11/9/2020	Simple Harmonic Motion Lab	Simple Harmonic Motion	Ohm's Law Lab
Week 13	11/16/2020	Light Refraction Dispersion Lab		Simple Harmonic Motion Lab
Week 14	11/23/2020	Concept inventory		Light Refraction Dispersion Lab

Remember, prelabs are due before the experiment meeting on Sunday at 11:59 pm. Labs are due Sunday at 11:59 pm after the experiment meeting.