

PHYSICS 21800 LAB SYLLABUS

SUMMER 2015

Lecturers:

First half: Dustin Hemphill, room PHYS 136, dhemphil@purdue.edu

Second half: Tony Clevenger, room PHYS 104, tcleven@purdue.edu

Textbook:

College Physics, Volume One, Eugenia Etkina, Michael Gentile, Alan Van Heuvelen, Pearson, 2014.

Lab Coordinator:

Andrzej (*Andrew*) Lewicki - room PHYS 142, lewicki@purdue.edu

Lab Manual:

Physics 218 Laboratory Manual, 2014/2015, Andrzej (*Andrew*) Lewicki, Nicholas Giordano and Michael Zimmer, LAD Custom Publishing, 2014.

Welcome to **Physics 218 (21800)** lab. This semester, you will explore the fundamental concepts of mechanics by performing experiments, collecting data and analyzing your results.

Labs meet in **Physics Building (PHYS) room 139**. Lab reports are due at the beginning of the next experiment. Lab reports are due at the beginning of the next experiment. For the exact dates, see the **lab schedule** at the end of this syllabus.

Always bring a calculator to the lab. **Do NOT bring drinks or food to the lab!**

The **help center** for Physics 21800 is located in **Room 11A** of the Physics Building. The help center schedule is available at the following address:

http://www.physics.purdue.edu/academic-programs/docs/help_centers/HC218220.pdf

The **Lab manual** (*Physics 21800 Laboratory Manual, 2014/2015*, Andrzej (*Andrew*) Lewicki, Nicholas Giordano, and Michael Zimmer, LAD Custom Publishing, 2014) is available in local bookstores.

Students who completed Physics 21800 lab in the last two years may claim the previous credit for the lab. The minimum requirement for the credit transfer is to have the number of points for the lab equal to at least 75% of the perfect score. To transfer your old lab score go to the **lab coordinator** with your Purdue ID no later than at the end of the second week of classes.

Lab procedures:

Before coming to lab, you must answer all prelaboratory questions scheduled for that week. These questions are closely related to the activities and measurements you will do in lab. The prelaboratory questions typically require 20-30 minutes of effort. The prelaboratory questions are your individual work, so everyone is expected to complete them. **The prelaboratory questions must be answered on-line (except of make-ups)** using the *MasteringPhysics* (the same online software as you going to use for homework assignments - <https://portal.mypearson.com/mypearson-login.jsp>). If you exceed the number of allowed attempts for a prelab question, then you would not get credit for that question. In other words, no partial credit above the allowed number of attempts. **The deadlines for prelaboratory questions is on Monday at 11:00 AM and on Wednesday at 11:00 AM.** There will be no credit for late prelaboratory questions.

In the lab, you will work with a lab partner. All experimental **data must be written in ink** on your data sheets. TAs have been instructed not to initial data sheets written in pencil. In all data sheets you will find a pair of parentheses with an empty space in between: (). You are required to write appropriate **unit** in that space, e.g., (m/s). Results without units are not complete!

During the two-hour laboratory period, you will observe phenomena, manipulate the lab apparatus, collect data and ask questions. Be on time for the lab. Remember to **sign the lab attendance list!** Your lab TA will briefly review the theory behind the experiment and describe the lab equipment to be used. **Before leaving the laboratory room make sure that your TA has initialed your data sheets.** The minimum penalty for lab reports without TA's initials is 2 points. TA may even refuse to accept lab reports without initials.

Lab reports are due at the beginning of the next experiment. For the exact dates see the **lab schedule** on the last page of this syllabus. During the week that follows each lab experiment, you and your partner will prepare a laboratory report, that includes your initialed data sheets, calculations, graphs (if required), cover sheet and the *Analysis* section. In that section, you should briefly describe the observed phenomena. You should also explain how the results were calculated from the raw data and what are the most important results of your experiments. Discuss sources of experimental error and their relative influence on your results. The lab report typically requires 1-2 hours of effort. The requirements for each lab report are clearly listed in the laboratory manual.

Group lab reports are allowed (but not required) this semester. It means that only one lab report for you and your partner is required. Obviously, the same credit will be assigned to both lab partners. **However, if a lab report is not ready on time, the penalty will apply**

to both students, regardless of who caused the delay. Remember to attach to your group lab report **separate cover sheets for all lab partners.** The cover sheets are located at the end of the lab manual. If you prefer to submit individual lab reports, you are always allowed to do that. Just tell your lab TA about your decision. The attendance will be taken at each experiment. Please, make sure to **put your signature on the attendance list.**

Each lab report ends with two conceptual questions. Usually, you will not find the answers to conceptual questions in the lab manual. Instead you should search textbook, other books available in the libraries and online resources. However, keep in mind that "copy and paste" method is not allowed! You are encouraged to search answers wherever you like, but you have to write answers in your own words. Simple "copy and paste" from Internet will lead to a penalty.

The prelaboratory questions must be completed and submitted **individually**. The lab reports from the lab make-ups must be submitted as individual reports (no group lab reports for make-ups).

ITaP is enforcing **print quota** on all printers connected to the ITaP network. Please be aware of your balance and print responsibly. All printouts required in the lab are part of your print quota.

Grading practice:

Each laboratory (prelabs + lab report) is worth a maximum of 14 points. We have nine labs scheduled (9×14 points = 126 points). **Since the maximum number of points for the lab portion of Physics 21800 is not 126, the total lab score will be multiplied at the end of semester by a normalization factor.** The score of 126 points for the lab (the perfect score) will translate into max. points allowed for the lab this semester (150). Check the course syllabus for information about how points are distributed among all course components (labs, homework assignments, exams, etc.) this semester.

Lab points are not converted into A, B, C, ... grades. At the end of the semester, the sum of your points earned for Physics 21800 (lab + recitations + exams) will be converted into one final letter grade.

Subtracting 1 point per school day will penalize late lab reports. Even if your lab report is very late, (i.e., zero points for the lab report due to the penalty) you would receive points for the prelaboratory questions and the lab would be recorded as completed.

If you have missed an experiment for a **valid reason** (e.g., illness):

- Give a written documentation to your lab TA during the next lab or bring it to his office and ask permission to make-up the missed lab.
- All lab make-ups are done in room PHYS 139 (Physics 21800 lab room) at the same day and time as regular classes.
- If you have not turned in the report from the previous lab, turn it in during the first day after your absence to the **drop slot** located below mailboxes between rooms 146 and 150 (make sure that your lab TA's name is written clearly on the cover page of your lab report).
- Your TA will set the due dates for make-up lab reports.
- If you have more questions about make-ups, please ask the lab coordinator.

ITaP is enforcing **print quota** on all printers connected to the ITaP network. Please be aware of your balance and print responsibly. All printouts required in the lab are part of your print quota.

You may not copy answers, lab reports, use "files", or allow your answers to be copied, by any other students (except of your lab partner). Any violation of the above standards will subject the offender to penalties allowed by Purdue University. If you wonder whether a course of action violates this policy, simply ask in advance. Any attempts to forge data (e.g., copying data from previous semesters or from other students) or to forge your TA's initials would also be penalized!

Students are not allowed to make up late lab reports or to make up more than one experiment during the scheduled lab make-up time. Re-doing labs is not possible. Make-ups are only for those who missed labs for a legitimate reason and got TA's permission to make-up labs. Prelabs for the make-up labs must be submitted on paper. Your lab TA will let you know the due dates for make-ups.

In case of a long illness, (e.g., two or more weeks in a hospital) you need to get permission from the lab coordinator to make up the missed labs. If you have any questions regarding the lab policies, please ask the lab coordinator. **Keep all graded lab reports** until the end of semester.

After 9:00 AM on Wednesday, August 5, 2015), we will not accept any lab reports (no exceptions)!

Physics 21800 Laboratory - Summer 2015

DATE	ROOM 139	REQUIRED
6/15	Introduction and Diagnostic Test	
6/17	M1 - Measurements and Experimental Errors	M1 Prelaboratory Questions (due on 6/17, 11:00 AM)
6/22	M2 – Newton's Laws of Motion	M1 Lab Report M2 Prelaboratory Questions (due on 6/22, 11:00 AM)
6/24	M3 - Motion in Two Dimensions	M2 Lab Report M3 Prelaboratory Questions (due on 6/24, 11:00 AM)
6/29	Lab make-up for experiments: M1 - M3	
7/1	M4 – Circular Motion	M3 Lab Report M4 Prelaboratory Questions (due on 7/1, 11:00 AM)
7/6	No Lab	
7/8	M6 – Impulse and Momentum	M4 Lab Report M6 Prelaboratory Questions (due on 7/8, 11:00 AM)
7/13	M5 - Work and Energy	M6 Lab Report M5 Prelaboratory Questions (due on 7/13, 11:00 AM)
7/15	Lab make-up for experiments: M4 - M6	
7/20	M7 - Rotational Motion	M5 Lab Report M7 Prelaboratory Questions (due on 7/20, 11:00 AM)
7/22	No Lab	
7/27	M8 – Archimedes' Principle	M7 Lab Report M8 Prelaboratory Questions (due on 7/27, 11:00 AM)
7/29	M9 - Pendulum	M8 Lab Report M9 Prelaboratory Questions (due on 7/29, 11:00 AM)
8/3	Lab make-up for experiments: M7–M9	M9 Lab Report

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