

PHYSICS 21800 LAB SYLLABUS

FALL 2009

Faculty:

Prof. Thomas Moffett – Room 344, moffettt@physics.purdue.edu

Textbook:

Principles of Physics, Volume One, Kinetic Books, Edition 1.3.

Lab Coordinator:

Dr. Andrzej (*Andrew*) Lewicki - Room 142, lewicki@physics.purdue.edu

Lab Manual:

Physics 21800 Laboratory Manual, 2009/2010, Andrzej (*Andrew*) Lewicki, Nicholas Giordano and Michael Zimmer, LAD Custom Publishing, 2009.

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

Labs meet in room **PHYS 139**. Lab reports are due at the beginning of the next experiment. The exact schedule of experiments is located at the end of this lab 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/class/services/HC218220.pdf>

Additional information about the course can be found on the WWW at:

<http://www.physics.purdue.edu/phys218/>

The **Lab manual** (*Physics 21800 Laboratory Manual, 2009/2010*, Andrzej (*Andrew*) Lewicki, Nicholas Giordano, and Michael Zimmer, LAD Custom Publishing, 2009) is available in local bookstores.

Since room PHYS 139 is connected to the ITaP computer network, you need to have the (**Purdue**) **career account** to be able to run experiments! If you do not have your career computer account yet, then bring your student ID to ITaP Information Center, MATH 231.

Students who completed Physics 21800 lab during Spring 2008 or later may claim the previous credit for the lab. The minimum requirement for the credit transfer is to have all

experiments completed and have the number of points for the lab equal to at least 75% of the perfect score.

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 the first experiment M1 and all make-ups)** using the *Computerized Homework in Physics (CHIP)*. CHIP is accessible to any computer running popular web browser software (e.g., Internet Explorer, Firefox or Safari). Prelaboratory questions for experiment M1 should be submitted on paper in the lab at the beginning of the experiment M1.

All lab scores including points for prelaboratory questions (prelabs) and points for lab reports will be stored on CHIP. **The prelabs of CHIP are due before the deadlines, which are set exactly at 10 minutes before the beginning of the scheduled lab time.** For instance, if the lab is scheduled on Wednesday at 11:30 AM, the deadline for prelabs is at 11:20 AM on that day. After deadlines, CHIP would not assign any points for the prelabs (no credit for late prelabs). Physics 21800 students will be able to check their latest scores using CHIP (look for “Student Gradebook”). You will find more information about accessing and using CHIP on a separate handout available in the lab or from Room PHYS 144 (Undergraduate Office).

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.

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!

Lab reports are due at the beginning of the next experiment. For the exact dates see the lab schedule.

Each laboratory (prelabs + lab report) is worth a maximum of 14 points. We have ten labs scheduled (10*14 points = 140 points). **Since the maximum number of points for the**

lab portion of Physics 21800 is equal to 150, the total lab score will be multiplied at the end of semester by the factor of $150/140 = 1.0714$

Since the grading level may slightly vary between TAs, **it is possible that the final lab grade will be normalized** to have the same average grade for all laboratory TAs. 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. Your lab TA will set the due dates for make-ups.

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.
- 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 PHYS 146 and PHYS 150 (make sure that your lab TA's name is written clearly on the cover page of your lab report).
- Prelabs for the make-up labs must be submitted on paper during the make-up session (CHIP is not set up to handle make-ups).
- 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.

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 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**.

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.

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 (CHIP is not set up to handle make-ups). Your lab TA will let you know the due dates for make-ups.

In a case of a long illness, (e.g., two or more weeks in a hospital) you need to get permission from the lab coordinator or the faculty in charge of the Physics 21800 course to make up the missed labs.

If you have any questions concerning the lab policies, please ask the lab coordinator. **Keep all graded lab reports** until the end of semester.

After 5:00 PM on December 14, 2009 we will not accept any lab reports (no exceptions)!

Physics 21800 Laboratory - Fall 2009

DATE	ROOM 139	REQUIRED
8/25-27	Introduction and Diagnostic Test	
9/1-3	M1 – Measurements and Errors	M1 Prelaboratory Questions
9/8-10	M2 – Newton's Laws of Motion	M1 Lab Report M2 Prelaboratory Questions
9/15-17	M3 - Motion in Two Dimensions	M2 Lab Report M3 Prelaboratory Questions
9/22-24	M4 – Circular Motion	M3 Lab Report M4 Prelaboratory Questions
9/29-10/1	M5 - Work and Energy	M4 Lab Report M5 Prelaboratory Questions
10/6-8	Lab make-up for experiments: M1–M5	
10/13-15	October Break (No lab)	
10/20-22	M6 – Impulse and Momentum	M5 Lab Report M6 Prelaboratory Questions
10/27-29	M7 - Rotational Motion	M6 Lab Report M7 Prelaboratory Questions
11/3-5	M8 – Archimedes' Principle	M7 Lab Report M8 Prelaboratory Questions
11/10-12	M9 – Pendulum	M8 Lab Report M9 Prelaboratory Questions
11/17-19	No Lab	
11/24-26	Thanksgiving Vacation (No lab)	
12/1-3	M10 - Standing Waves on Guitar Strings	M9 Lab Report M10 Prelaboratory Questions
12/8-10	Lab make-up for experiments: M6–M10	M10 Lab Report

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