

PHY175: University Physics Laboratory I

Spring 2011

General Information and Grading Policies

Coordinator

[Dr. Axel Mellinger](#)

Dow 222, Phone: 774-3336 (office) or -2184 (lab)

Email: axel.mellinger@cmich.edu

Office hours: Mo, Tu, We and Fr. 11:00 AM - 12:00 PM, or by appointment

Teaching Assistants

TA	Yoseph Daniel	
Office	Dow 224	
Office Hours	Mo, Tu, We 1:15 – 2:15 pm	
Email	danie1yg@cmich.edu	

Time & Location

All classes are held in Dow 101

CRN	Time	Teaching Assistant
22140908	We 07:00-08:50 pm	Yoseph
22143877	Th 08:00-09:50 am	Yoseph
22140906	Th 01:00-02:50 pm	Yoseph

Required Materials:

Axel Mellinger, William R. Matson & Didarul I. Qadir: PHY-175 Laboratory Manual, January 2011 ed. **Do not use any older editions.** Available online through Blackboard (check the "Course Materials" section).

Calculator with statistical package such as the TI-36X Solar

From the CMU bookstore: PHY 175 materials pack (graphing paper, etc.)

Overview:

This course requires concurrent enrollment in PHY 145 or having previously completed it with a passing grade. Principles outlined in the general lecture will be assumed knowledge. Please carefully read the first two chapters in the Laboratory Manual for important details concerning expectations, report writing, and grading policies. Each experiment is carefully detailed in chapter 3 of the laboratory manual. It is expected that you read the assigned experiment before you arrive in the laboratory. This will assist you in arriving prepared to perform the experiment. It is your responsibility to carefully read the experiment and follow its instructions. The laboratory instructor will acquaint you with any equipment you will be using. Arriving on time and prepared is expected. Tardiness will result in lost points.

This course is intended to introduce the student to sound experimental practices and procedures. Students will learn methods of quantitatively investigating natural phenomena and quantifying the recorded results and their reliability. On completion of this course, you should have developed the necessary skills to independently conduct simple experiments, collect quantitative and meaningful information about desired parameters, and write a meaningful scientific report on

your findings. These skills will be tested in the final examination.

Basic Course Goals

- become familiar with some particular laboratory equipment and procedures
- make careful and critical measurements
- record and organize your observations
- estimate uncertainties in your measurements
- judge whether your measurements are consistent with previous measurements

Procedures

When coming to class, you must bring and show to your instructor **a brief introduction, up to one page**, stating the objectives of the lab, the experimental approach and the principles to be examined. **This introduction constitutes the first part of your lab report.** If you do not show this introduction, you will lose 10% of your credit for this experiment.

Please hang up your coats and book bags when you enter. Show the introduction you have prepared to your Instructor, listen to his/her specific or general comments and instructions, and then start working.

Do not leave the lab until you are sure that all your data has been properly collected. In most cases you will finish taking data before the lab period ends. If this is the case, you are expected to work on your report.

You are expected to leave your lab station as you found it. Your instructor may deduct points from your lab report if your station is left in a mess. You may be held responsible for damaged or missing equipment at your lab station, so have it checked by your Instructor before you leave.

Lab Reports / Deadlines

Each student must turn in a report for each lab. Completed lab reports are due before the start of your class in the following week. **Lab reports handed in late will receive partial or no credit: 70% if less than 3 days late, 50% if less than 1 week late, 0% otherwise.** Standard lab reports will be graded on a 10-point scale. Some experiments are marked as "FORMAL", and the report must be typed on a word processor and adhere to an outline detailed in the Lab Manual. These reports are graded on a 20-point scale.

Lab Partners

Unless the class is over-subscribed, you may work with only one lab partner. Groups of three may be permitted if the experiments allow & require it.

Attendance

Attendance is mandatory! Labs can only be made up if the absence is due to serious circumstances and if the Lab Coordinator is notified immediately of your absence.

Classroom civility:

Each CMU student is encouraged to help create an environment during class that promotes learning, dignity, and mutual respect for everyone. Students who speak at inappropriate times, sleep in class, display inattention, take frequent breaks, interrupt the class by coming to class late or leaving early, engage in loud or distracting behaviors, use cell phones or pagers in class, use inappropriate language, are verbally abusive, display defiance or disrespect to others, or behave aggressively toward others may be asked to leave the class and subjected to disciplinary action.

Experiments

Number	Week	Title/Description
1	Jan. 10-14	Precision Instruments: Vernier and Micrometer Calipers
2	Jan. 17-21	Gravitational and Inertial Properties of Mass
3	Jan. 24-28	Velocity & Acceleration (FORMAL)
4	Jan. 31-Feb. 4	Projectile Motion
5	Feb. 7-11	Resolution & Addition of Forces
6	Feb. 14-18	Elastic and Inelastic Collisions (FORMAL)
7	Feb. 21-25	The Ballistic Pendulum
8	Feb. 28-Mar. 4	The Simple Pendulum
Spring Break		
9	Mar. 14-18	Hooke's Law and Centripetal Acceleration
10	Mar 21-25	Moment of Inertia of a Disk (FORMAL)
11	Mar 28-Apr. 1	The Torsional Oscillator
12	Apr 4-8	Vibrating Strings
13	Apr. 11-15	Specific Heat and Latent Heat
Final	Apr. 18-22	Laboratory Final (topic t.b.a.)

Points and Grades:

Laboratory scores and grades will be computed as follows:

Quizzes	20
Lab Report (10 × 10)	100
Formal Reports (3 × 20)	60
Final Exam	60
Total	240

≥92%	A	≥68%	C
≥89%	A-	≥64%	C-
≥85%	B+	≥60%	D+
≥80%	B	≥55%	D
≥76%	B-	≥51%	D-
≥72%	C+	<51%	E

Academic Dishonesty

[Campus policies concerning Academic Integrity](#) will be **strictly observed**.

Although data collection is a group activity, **students must do calculations and reports independently**. Presentation of copied work will result in 0 Credit on the assignment and may lead to disciplinary action.

ADA

CMU provides students with disabilities reasonable accommodation to participate in educational programs, activities, or services. Requests for accommodations must be submitted in writing to Student Disability Service (SDS). Students are referred to the Handbook for Students with Disabilities available on the SDS website for information regarding what accommodations are available. Anyone requiring accommodations should contact their instructor or coordinator as soon as

possible in the semester.