Physics 213/223: General Physics I/Laboratory Physics I

Instructor: Dr. Itai Seggev (dōk′•tər ē•tiť sē′•gēv)

May 30, 2006

1 Contact Information

Office: Lewis 121A  Phone: 662-915-3887  Email: iseggev@phy.olemiss.edu
Office Hours: I will generally be around in the afternoon and available for help, especially
3:00 PM – 4:00 PM. Feel free to look for me in my office or the tutoring lab. You can also
talk to me right after class or make an appointment for some mutually convenient time.

2 Course Goals

Welcome to General Physics I! This course explores basic principles of physics with a
view towards applications to the life sciences and related fields. We will explore kinematics
(motion), forces, energy, momentum, fluids, waves, and thermodynamics. Specific course
goals include the following:

1. improving deductive reasoning skills;
2. developing an appreciation for physics and its applications to many sciences, especially
life sciences, as well as everyday life;
3. understanding the relationship between the fundamental physical quantities of force,
momentum, energy, and heat; and
4. learning basic concepts covered on the MCAT examination.

This is a course which many students find very challenging. Please don’t lose heart!
I am confident that if you put in the effort you will be able to excel.

3 Course Format

The course meets daily 10:00 AM – 11:50 AM. Attendance is required. The course
will be as interactive as possible and will include group work and electronic polling on
questions. Missed in-class assignments will result in a grade of zero, so you should come to
class on-time and prepared. Lecture will not simply repeat material covered in the text. If
you do not do the reading assignments ahead of time, you will likely get little out of lecture.
Most homework will consist of on-line assignments accessible at the course website: 
http://edugen.wiley.com/edugen/class/cls22041/
Your textbook should have included a registration code necessary to access the site. It is your responsibility to log in daily and keep up with what is posted. If you have any problems with the site you should let me know immediately.

4 Grade Breakdown

The course lecture grade will be based on the following formula:

- Reading Assignments (5%)
- Homework Assignments (20%)
- Individual Quizzes (10%)
- Class Participation (5%)
- Group Assignments/Quizzes (20%)
- Midterm Exam (15%)
- Final Exam (25%)

Note: You must register your clicker on Blackboard no later than 11pm on Tuesday, May 30, or you will lose 20% of your class participation grade.

5 Course Outline

The textbook for this course is *Introductory Physics: Building Understanding* by Jerrold Touger. We will cover most of the material in chapters 1–14. We will cover additional material as time permits. The course website has a large number of supplements. These include interactive examples, video demonstrations, and solutions to select problems. You are strongly encouraged to make use of these resources. Please see the attached calendar for an exact course outline for both lab and lecture. While this schedule is subject to change, we are unlikely to deviate much from it.

6 Lab

Lab receives a separate grade and is technically a separate course. In it, we perform lab experiments that complement the concepts studied in the corequisite lecture course, Physics 213. As in most physics courses, critical thinking, analytical reasoning, and problem solving skills will be emphasized. Specific goals for laboratory include the following:

1. deepening our understanding of measurements and their uncertainties;
2. mastering the operation of various laboratory equipment;
3. improving technical writing skills, including the creation proper graphs to display data.

You will receive several documents with laboratory policies. These include the *General Physics Laboratory Manual*, the syllabus from your TA, and Ms. Robert’s syllabus.
You are responsible for knowing and following all these policies. In the event that these documents contradict each other or this syllabus, you should ask for clarification from your TA, Ms. Roberts, or myself (in that order). I have final authority over policy and will issue clarifications or settle any disputes as the need arises.

7 Academic Dishonesty

I will generally trust that you will observe the guidelines regarding collaboration stated in this syllabus and that you will be academically honest. However, any case of academic dishonesty will be dealt with harshly and reported to the University. Please keep the following in mind:

1. Any instance of cheating on an exam will result in an automatic failing grade for the course.

2. Since class attendance and some in-class quizzes are recorded by the PRS system, giving your clicker to another student is a form of cheating. If I notice more clickers going off than there are students in the room, I will stop class and take attendance. Those involved will receive an automatic failing grade in the course.

3. The lab manual clearly states that lab reports must be individual efforts. If duplicate or nearly duplicate reports are submitted, those involved will receive a zero for that report. More serious forms of cheating will result in a minimum one-letter-grade reduction of final grade. Extremely serious forms of cheating—such as “recycling” a lab report from previous years—will result in an automatic failing grade for the course.

8 Detailed Policies

8.1 Homework

Each night there will be two assignments, both due the following morning. The first is a reading assignment, which will cover the material to be discussed during the next class. If you do not do the reading assignment, you will get little out of class. The directions page for the assignment will list what sections should be read; subsequent pages consist of some the associated on-line activities for those sections. The system will keep track of which activities you performed, but not whether you answered any questions correctly. Your grade will simply be the percentage of activities you perform. You are, of course, invited to peruse the other online supplements at the site; the reading assignment will consist of those I judge to be most important.

The second assignment will consist of exercises from the book on the material already covered in class. Note any special directions a problem might give, especially as regards significant digits or units. Your answer will be counted incorrect if you do not follow these instructions. You will allowed multiple attempts on most problems. Homework assignments are your best opportunity for working out confusions and mastering the material. While you are encouraged to discuss problems with your classmates, your submissions must
be your own work! Many of the problems are “algorithmic”, mean each student will get different numbers. Thus, it is likely that simply entering the answers your friend got will not give you credit. Moreover, you are strongly encouraged to spend some time (at least 15 to 20 minutes) on each problem by yourself before seeking help. It is much easier to understand a solution than to come up with one—as will become evident when you take the midterm.

8.2 Class Participation and Clickers

Coming to class and participating in it are vital parts of this course. Everyone learns best when they are actively engaged in the lesson. This is especially true in physics class, which deals with concepts which can seem a little foreign at first. You should come prepared with a clicker (see below), calculator, and anything else you may need to participate. Ask questions if you get lost. My goal is to teach you, not spend two hours confusing you. Demonstrating your involvement by asking questions or volunteering answers can only help your grade. Finally, please be prompt—you are responsible for all material whether or not you were in class, and there is no way to make up missed in-class assignments.

It is difficult to have an interactive lesson in such a large class. One tool to facilitate this is a “clicker” that allows the class to vote electronically (much like on TV 😊 ). Your textbook includes a bundled interwrite™ PRS clicker. Once you have purchased your clicker you will need to log on to Blackboard and register its ID. The ID is the six-digit number on the back of the actual clicker device. Most “clicker questions” will be not be graded, but some will count as in-class quizzes; these will be clearly marked as such. Attendance will also be taken using the clickers. If you forget to bring your clicker you may record your answers on a piece of paper and turn it in at the end of class in order be counted present. However, you will not receive credit for any in-class quizzes which you may miss.

A second tool which will be heavily used is group activities. Some group assignments will be graded. Each member of the group in attendance will receive the same grade for these. However, if it becomes evident to me that a certain member of the group is not participating, that person may forfeit their grade. Also note that your group-mates will also be asked to rate you on preparation and participation. This information, along with attendance and my observations of your participation in class discussions and group activities, will figure into your class participation grade.

8.3 Exams

The midterm will be on Thursday, June 8, from 1pm to 3pm. The final will be Monday, June 26, at noon. Barring a documentable emergency (e.g., being hospitalized), you must contact me well in advance of the exam in order for me to consider providing any sort of makeup. The final must be taken at the schedule time unless required by University policy.

Exam grades will be curved: the maximum score will be determined by the average of the first, third, and fifth highest grades on the exam. All tests will be in-class, closed-note, and closed-book. However, you will either be provided with a formula sheet or allowed to bring in a index card with your own notes.
8.4 Final Overall Grades—Lecture

I go through the following process in determining final grades:

1. I compute everyone’s overall average according to the formula given in Section 4. I may also do an overall curve.

2. Starting with the standard 90/80/70/60 ABCD scale, I adjust this scale (usually downward) so that it coincides with gaps in the grade distribution. This way, a few points do not make a difference in the overall grade.

3. Finally, I examine each student’s grade individually. If I see a noticeable improvement or I am aware of extraordinary circumstances (extended illness, getting a concussion the night before the midterm, etc.), I may adjust the grade. Students who have excellent attendance and who I see making the maximum effort will get the greatest benefit during this step.

8.5 Lab Attendance

Attendance is mandatory. Unexcused absences will result in a grade of zero for any assignments missed. If you have a valid reason for missing class—illness, University function, etc.—you should email Ms. Roberts for an excuse. The precise policy is spelled out in Ms. Roberts’ syllabus. Remember that attending a section other than the one you are registered for requires prior permission. The TA will not allow you to participate if you do not have a permission slip from Ms. Roberts, so be sure to bring the slip and obtain your TA’s signature.

8.6 Final Overall Grades—Lab

Unlike lecture, there will be no curving of grades in the lab course. However, I may adjust lab report grades in order to ensure consistency across both sections. Also, note that no lab report grade will be dropped. The final grade will be assigned according to the 90/80/70/60 ABCD scale, and grades will not be rounded upwards.

If you are dissatisfied with a lab grade you received, your first step should be to discuss it with your TA. If you are unable to come to a successful resolution, you may appeal to me. However, the burden will be on you to convince me that the TA made an error.

9 Finally

Doing physics involves both learning concepts and mastering problem solving. These are distinct skills, but they interact and support each other. Remember that solving a problem is not necessarily a linear process; wrong turns and dead ends are often instructive. You will often find that you read the book and somewhat understand a concept. If you then do a problem, that concept may become clearer, and reading the book a second time will then result in a deeper understanding. Do not be afraid to do practice problems and reread the book as many times as necessary—it will eventually all come together.