PHYS 101

Fundamentals of Physics I

Instructor:

Prof. David Goldberg (*goldberg@drexel.edu)*

Disque Hall, Room 810

x2715

Lecture: MW 1-2, Disque 103

Office Hours: MWF 2-3, or by appointment in advance

Course Staff:

- Mr. Michael Kaczmarczik (*mck53@drexel.edu*)
  Disque Hall, Room 622 (x2712)
  Recitations: 1,7,9
  Office Hours: TBD
- Ms. Rachael Kratzer (*rmk55@drexel.edu*)
  Disque Hall, Room 809
  Recitations: 2, 8
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- Dr. Joe Trout (*st92l7c3@drexel.edu*)
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  Disque Hall Room 820
  Labs: TBD
- Mr. Anup Umranikar (*anup@drexel.edu*)
  Disque Hall, Room 705
  Recitation: 6
  Labs: TBD
  Office Hours: Thursday 12-1pm, or by appointment in advance
- Ms. Sarah Wanger (*saw66@glink.drexel.edu*)
  Disque Hall, Room 705
  Recitations: 3,4,5

Textbook:

Sear and Zemansky's University Physics, 12th ed., Young and Freedman. 2007. Addison Wesley.

Please note that this book comes with an access code for the website, "mastering physics." To get started, please go to:

http://www.masteringphysics.com/site

Course Overview:

The course description reads," First of a four course sequence teaching fundamental physics to engineering and science majors. Topics include: description of motion, inertial and non-inertial frames, special relativity, Newton's Laws, translational and rotational equilibrium, one- and two-dimensional motion, fundamental forces, inverse square laws, Gauss' Law, Bohr's quantization, rotational dynamics, potential energy, black holes, determinism and chaos."

In fact, this is an understatement. We are going to be doing a **lot** of introductory physics in this course. We will typically cover about a chapter each week (our goal is to get up to Chapter 10 in your book), so make sure you are up-to-date on your reading.

We will meet twice a week for 1 hour. Lectures will consist primarily of information based on the readings, though there will also be some in-class demos. Reading assignments will be given out in class. You are obviously expected to attend all lectures, and there is an explicit class participation component to your final mark. In other words, ask questions! Just so you know, I do take attendance in lecture occasionally. Your best bet to always be on the attendance sheet is to always be in attendance.

Prior to each lecture, you should read the assigned material. The lecture is not a substitute for the textbook (or vice-versa), but rather a supplement to it.

Traditionally, recitation is a much more informal part of the class. You will meet in smaller (approximately 20/section) groups with your TA, discuss the homework, do additional problems from the book (which will be assigned the friday before on the course webpage), and go over concepts that you are having difficulty with. Recitation sections are a required part of the course, and your attendance and participation will be included in the class participation component of your grade.

Academic Honesty

Discussion is strongly encouraged when working through problem sets, and, since labs are done in groups, it is expected that your write-ups will be similar. Here's a guideline -- if a friend describes how to go about solving a problem to you without specifically writing equations, then you are fine. If, however, you directly transcribe the work of another, you are plagiarizing their work.

Students caught plagiarizing another's work or permitting cheating off their own work will receive a zero on the assignment or exam for the first infraction. They will fail the course and be reported to the office of judicial affairs for a second.

Course Webpage:

Please note that we don't use blackboard or vista for this class. The official course webpage is at:

http://mimas.physics.drexel.edu/Physics101

Class Participation (10%):

I will take occasional attendance in lecture, and it is expected that you be there. In addition, your recitation instructors will take attendance every week. Make sure you show up, have done your recitation problems, and are ready to ask questions and learn. I have also put a pdf of a 4-color "flashcard" on the course website. Please print this out. This is the poor-man's "clicker." I will occasionally ask questions in class, and you will indicate your answer by holding up the correct color.

Homework (20%):

Homework in this class will take two forms.

1. Every Friday, I will post a new assignment on the "Mastering Physics" site. It will be due at midnight the next Friday. While you can discuss general topics from the class with your friends, it is expected tat you do the work on your own. Each assignment will consist of 3-5 problems with multiple parts. The system gives you opportunities to get hints and take multiple attempts, but you should definitely contact me or your TA if you are having difficulty.

   Note: There will be a "mastering physics" assignment due the first week of class. It is really just a diagnostic.

2. On Wednesday of weeks 2, 5, and 8, you will be given a written assignment in recitation, to be turned in a week later. These problems will be ones I make up as

well as a few from your book. The reason for these is that we want to give you an idea of how we grade and the sort of problems I like to give *before* you take any of your exams.

As a guideline, half the points are given for your answer, and half the points are given for your work, so be sure to be clear about how you solve your problems.

Labs (15%):

There will be four labs over the course of the term. Odd numbered labs sections will meet ONLY in odd numbered weeks (3,5,7,9), and even numbered sections will meet ONLY in even numbered weeks (2,4,6,8). All labs are held in Disque 820A.

You can get the lab assignments on the course webpage. You are expected to read over the purpose and theory prior to lab section, as well as do your pre-labs. You will not be able to start your labs unless you have done so. You will also get a significant penalty on your lab score if you show up without doing your pre-lab.

Students in each group work together as a team to collect data. The students themselves decide upon the responsibilities of each group member, although all should make roughly equal contributions. Each group must submit a copy of the data sheet, with *all* members signing it before leaving the laboratory. Each student should also keep a copy of the experimental data for use in his/her lab report.

Exams (15% each):

During weeks 4 and 8 of term, we will have exams from 8-9am. Rooms and days will be announced shortly. These exams will be comprehensive and closed book. I will give you an equation sheet approximately 1 week ahead of time with all of the information that you will be given on the exam. It is expected that you bring a calculator.

Please note that the exams will be similar in style and have similar grading criteria to the written homeworks described above. As with the homeworks, it is important that you show all of your work in addition to getting the correct answer.

Final Exam (25%):

During finals week, we will have a cumulative exam. Anything/everything that we've discussed in class is fair game.