

COURSE INFORMATION – Spring 2013
Physics 122: General Physics II (Sections 4, 5, 6)
Class: Workman Center 101, Tue/Thr 11:00–12:15 pm
Office Hours: 12:15–13:00 Tue/Thr or by appointment
Recitation: Tue/Thr 14:00–16:00 (Weir 102) & Thr 18:00–20:00 (WC113)
Corequisites: Physics 122L (lab), Math 132 (calculus II)

Class Instructor: Dr. Richard Sonnenfeld
Cel Phone: 575-838-7113 (until 10 pm)

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1 Welcome!

Welcome to the second semester of General Physics. Successful completion of this course satisfies the general degree requirements for physics at Tech.

1.1 Course Goals

You will gain a working understanding of Electric and Magnetic fields, charges, currents and voltages. You will be exposed to simple electric circuits and properties of light.

1.2 Websites

The main site is <http://www.physics.nmt.edu/~rsonnenf/phys122/phys122.html>
Here you will find syllabus, sample tests, and lecture notes. The site also links you to Moodle. (moodle.nmt.edu).

1.3 Questions and Corrections in Lecture

I strongly encourage questions in lecture, and know it takes courage to ask a question in front of 50 of your peers. Questions make the lecture much more interesting and relevant for all. Extra credit points will often be given for questions, and always for corrections or clarifications.

1.4 Textbook

Required Textbook: *Physics for Scientists and Engineers*, Randall Knight, Third edition, with workbook and Mastering Physics supplement.

2 Honesty

Tech has a clearly written academic honesty policy which applies to all courses even if the instructor does not mention it. It is available in the 2013-2014 Undergraduate Catalog (starting on page 59). Find the catalog at: <http://www.nmt.edu/university-catalogs>. I encourage you to read it. I have found Tech students to act honorably, with few exceptions. For those lapses of judgement I have taken actions ranging from failing the exam/homework in question to failing the student for the course.

3 Grading

Your grade includes homework (25%), exams (60%), recitation and quizzes (10%), and clickers (10%).

3.1 Reading Assignments

You will be asked to read roughly one chapter per week. It is well known that no human can pay full attention through a college lecture, and the problem is worse for 75-minute lectures than 50-minute lectures. It is thus important that you skim the book *before* lecture, and reread afterwards. When you read, I recommend you calculate along with the examples using pencil and paper.

3.2 Homework

There will be two types of homework: written problems to be turned in, and online problems which are graded automatically and immediately.

3.2.1 Homework due dates (typical)

The due dates on Moodle for each assignment shall be the governing dates. Generally, homework will be assigned on Mondays by being posted on Moodle. On-line homework is generally due at 23:59 on Monday evening. Written homework is usually due at recitation.

3.2.2 Written Homework

The most important part of solving a physics problem is figuring out how to start. Even if you are working with a group, it is critical to personally suffer through the *Visualize* and *Model* steps that Knight talks about.

Worked problems should *always* show a 3x3 inch figure (*Visualize*), the fundamental equations used (*Model*), and an orderly series of steps (*Solve*) leading from fundamentals to answer. Numerical answers without physical units are incomplete, and points will be deducted.

Late written homework: Written homework will lose a letter grade for each class period it is late, except where an extension is approved in advance.

3.2.3 Online Homework

Mastering Physics is the online homework system. (<http://www.masteringphysics.com/>)

The MP Course ID is **SONNENFELD2014**. If you do not type this ID correctly when you first sign up, you will need to write to customer service to fix it.

If you already have a Mastering Physics login from a previous course, you do not have to purchase another one unless it is more than two years old. However, if you bought the code with our old text (Wolfson) please let me know. You probably need to go to Pearson customer-service to get your code converted to Knight.

Do it here: <http://247pearsoned.custhelp.com/app/home>

I have set up the online homework system to allow up to 6 tries for each question (with only a three percent penalty for each wrong answer given). The system offers hints (with NO PENALTY) if needed.

Late online homework: If online homework is late, it will be accepted at a penalty of three percent per day. When the penalty gets to 50%, it goes no lower. You can still turn-in online homework for 50% credit up until the day final exams begin.

3.3 Clickers

We will be using iClickers during almost every class. Please REGISTER your Clicker at

<http://www.iclicker.com/support/registeryourclicker/>.

For student ID, use your 900#. Clicker ID is on back of iClicker.

Every response earns you one point. Every correct response earns you an additional point. You may leave your clicker with me if you do not want to carry it around. Check out an iClicker for the semester from the library or buy your own. (We are using iClickers. The iClicker2 may not be compatible.)

3.4 Recitations and Quizzes

Most recitations will have a quiz. The TA will work a problem very similar to the quiz problem, allow for discussion, and then give the quiz. If you understood the presentation from the TA, you should get an excellent quiz grade. After the quiz, the TA is available to assist with homework problems.

3.5 Exams

We will have four exams spread throughout the semester. The first three will occur during the recitation period. The last of these will occur during finals week. No exams will be dropped. However, your highest exam grade will count double. During exams, cel phones should be securely stowed in your back-pack or left with the TA. Scientific (but not programmable) calculators may be used on exams. However, use of *only* a four-function calculator will earn you a 4 point bonus. Use of a slide rule on an exam provides a 10 point bonus! (See me to request a lesson.) Answers that require a calculation but are left uncalculated will not receive full credit. Exams are closed book and closed notes. You may bring a single 3x5" index card.

4 Getting Help

There are many resources available to help you with problems or concepts which you find difficult. I encourage you to form a homework team, and will help connect you to other students if you need this help. You are responsible for assuring that you learn the material.

The graduate students provide tutoring at the (free!) help sessions in Workman 110 (center of the downstairs floor); check outside the door or by the physics department office to see the scheduled times.

The Office of Student Learning in Speare 110 provides tutoring from 1:00-7:00 pm Mon-Thursday. I am also glad to answer your questions during (or after) class, or at my office (during office hours).

I am usually available for *virtual office hours* in which I answer questions via e-mail. To get this kind of help, e-mail me the work you did and what problem you are having. You can scan in or photograph your paper or type the formulae into the computer. I often respond within an hour or two, but sometimes I take a night off. If you need an urgent response, see me in person.

The class webpage has links to online resources. Particularly helpful are the Physics Forums boards, where folks at all hours are ready to give hints for homework problems and answer other physics and math questions.

4.1 Learning disabilities

If you have (or think you may have) a learning disability, visit the counseling center with all speed and get a documentation letter. Make an appointment to speak with me regarding how you can best succeed in the course. Please see me before the end of January.

Good luck, and have a great semester!