

PHY2053 GENERAL PHYSICS I

Spring 2018

Instructor: Douglas H. Laurence

Time: TR 12:30PM – 1:45PM

Email: TBA

Room: TBA

Course Website: [PHY2053 Course Website](#)

Office/Office Hours: My office is Room 7/135. My (official) office hours are:

- M : 11A - 12P
- W : 11A - 12P and 4P - 5P
- T : 1130A - 1230P and 330P - 430P
- R : 2P - 4P

If I'm in my office, feel free to ask me questions, whether or not it's during the "official" office hours.

Required Materials: All you are **required** to buy is the **Textbook:** Physics, 5th ed., James S. Walker, ISBN: 9780321976444. You also need a **scientific calculator**; graphing/programmable calculators **are not allowed** during exams.

Additional Materials:

For a great review of all the mathematics necessary for physics, I don't think you can beat [Paul's Online Math Notes](#). It has thorough reviews of algebra, trigonometry, pre-calculus, etc., all of which are essential to succeeding in a physics course. The number 1 issue that students have in learning physics, from what I've seen, is a lack of comfort with algebra; so the best thing you can do to ease the learning process is to make sure your math skills are honed and up-to-date.

Objectives: During the semester, we will cover the following topics:

- Vectors
- Kinematics
- Newton's Laws
- Energy Conservation
- Momentum Conservation
- Rotational Motion and Gravity
- Applications: Simple harmonic motion, waves, and fluids
- Thermodynamics

Prerequisites/Co-requisites: MAC1114, Trigonometry, is a **prerequisite**, and PHY2053L, General Physics I Lab, is a **co-requisite**.

Tentative Course Outline: You need to **read Chapter 1** on your own. This syllabus is **subject to change with prior notification** from the professor. The Course Website (see the top of the syllabus) has the **most recent course information**, so check it frequently!

Week of	Monday	Wednesday	Week of	Monday	Wednesday
January 8	Vectors	1d Motion	March 12	Review for Exam 2	Exam 2 (Ch 7 – 11)
January 15	MLK Day	1d Motion & 2d Motion	March 19	Gravity	Oscillations
January 22	2d Motion & Newton's Laws	Newton's Laws & App. Newt.	March 26	Waves & Sound	Waves & Sound
January 29	Applications of Newton's Laws	Review for Exam 1	April 2	Fluids	Review for Exam 3
February 5	Exam 1 (Ch 2 – 6)	Work & Energy	April 9	Exam 3 (Ch 12 – 15)	Temperature & Heat
February 12	Conservation of Energy	Conservation & Momentum	April 16	Temp. & Heat & Phase Changes	Phase Changes & Thermodynamics
February 19	Momentum & Collisions	Rotational & Kinematics	April 23	Thermodynamics	Review for Final Exam
February 26	Rotational Dynamics	Rotational Dynamics	April 30	No Class During Finals Week	Final Exam
March 5	Spring Break	Spring Break			

* **Blue days are days off, red days are exam dates.**

Exam Structure: For each exam, except the final exam (which is determined by the College), you will have the full class time of 1 hour and 50 minutes, and the exams will be taken in our regular classroom. The exams are going to be a combination of multiple choice questions, which will either be conceptual in nature or of the so-called “plug-and-chug” variety (we’ll discuss these types of problems a lot in class), and free response problems, which will be multi-step, involved computations that take much longer to solve than the quick multiple choice problems.

Each exam will have **10 multiple choice problems** worth 2 points each, for a total of 20 points. Each multiple choice problem will have **four options**, (a) through (d). There are many ways you can eliminate options if you aren’t sure about the answer, and we will cover some of them throughout the class. Additionally, there are **4 free response problems** worth 20 points each, for a total of 80 points. Thus each exam will be scored out of 100 points. **There will actually be FIVE free response problems per exam, of which you only have to answer FOUR, so you get to choose one problem to “drop”.** **You may NOT turn a solution in for the fifth problem for extra credit.** If you turn in an exam with free response problems 1, 3, 4 and 5 solved, I will grade those, but if you turn in an exam with all 5 solved, I will grade 1 through 4, **regardless of whether or not those were your four best answers.**

Grading Rubric: My grades are assigned on a **sliding scale**, meaning that your lowest exam hurts you the least and your best exam helps you the most, though the final exam is worth the same number of points no matter what. The scale is:

Homework	15 points
Lowest-graded Exam	10 points
Mid-graded Exam	20 points
Highest-graded Exam	25 points
Final Exam	30 points
Total	100 points

You can use the following formula to compute your grade in the class (the grading scale follows this section):

$$\text{Points Earned} = (\%HW * 15) + (\%LG * 10) + (\%MG * 20) + (\%HG * 25) + (\%FE * 30)$$

where *HW* is your homework grade, *LG* is your lowest-graded exam, *MG* is your mid-graded exam, *HG* is your highest-graded exam, and *FE* is your final exam; the % signs indicate to write your scores out in percentages (as decimals), instead of total number of points. As an exam, say you scored a 94% on the homework, a 75% on exam 1, a 92% on exam 2, an 85% on exam 3, and an 83% on the final exam; your final grade (as in the total number of points earned) is:

$$\text{Points Earned} = (0.94 * 15) + (0.75 * 10) + (0.85 * 20) + (0.92 * 25) + (0.83 * 30) = 86.5$$

Grading Scale: The following table tells you how many points are required to earn a particular letter grade. Notice how I display the points: I always round to **first decimal point**, which means that if you score a 64.94, that equals 64.9, which is a D; if you score a 64.96, that's a 65.0, which is a C.

A	85.0 – 100.0
B	75.0 – 84.9
C	65.0 – 74.9
D	55.0 – 64.9
F	< 54.9

Exam Dates: I gave the exam dates above, but here they are in a way that's quick to reference:

Exam #1 February 5, 2018
 Exam #2 March 14, 2018
 Exam #3 April 9, 2018
 Final Exam May 2, 2018

Course Policies:

- **Attendance:** Attendance isn't taken, but you should absolutely attend every lecture. Physics is a very difficult subject, and the lectures are going to help you learn it; not attending a lecture means forfeiting the main help you have in learning the subject.
- **Classroom Conduct:** As long as your behavior isn't disruptive or disrespectful to your classmates, I generally don't care how you spend your time during lecture. I'm fine with arriving late or leaving early (coming to a portion of the lecture is better than missing it entirely), as long as you don't disrupt class when you do so; you are free to bring your laptop to class or use your phone, but I would recommend only doing so in the pursuit of understanding the material we're covering. Essentially, you're an adult and I will allow you to make your own decisions, as long as they don't affect anyone else in class, but I strongly encourage you to participate in the class and take full advantage of the professor.
- **Religious Holidays:** If there is a scheduling conflict for a major religious holiday, it is **your responsibility to coordinate with me in advance** to get an extension or re-schedule an exam. A religious holiday **is not an acceptable excuse** to miss an assignment **without talking to me first**.
- **Excused Absences:** As defined by the Broward College Student Handbook, 2017-2018 ed., found at [this link](#), an excused absence is an "[absence] from academic activities because of observances of major religious holy days in his/her own faith, the student's serious illness, death in the immediate family*, or attendance to statutory governmental responsibilities**." The immediate family is defined as "mother, father, spouse/domestic partner, child, brother, sister, grandparents or grandchildren." A statutory governmental responsibility is defined as "such matters as jury duty, subpoena for court appearance, or unplanned military obligation." As discussed in the previous section, religious holidays need to be discussed prior to their occurrence in order to receive an excused absence. The same applies to **any foreseen absence**, such as a doctor's appoint, a *planned* military obligation, a *scheduled* court appearance for a civil matter (or a matter such as a parking ticket), etc. You are responsible for learning all material covered in your absence, even if it's excused, meaning that material cannot be removed from an upcoming exam if you have an excused absence; you still need to learn what you missed.
- **Academic Dishonesty:** Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. The Academic Dishonesty policies of the Student Handbook apply to this course; see above policy on Excused Absences to find the link to the current edition of the handbook.
- **Code of Conduct:** The College has a strict Student Code of Conduct to make the College a safe learning environment for everyone. The Student Code of Conduct of the Student Handbook apply to this course; see above policy on Excused Absences to find the link to the current edition of the handbook.