PHYSICS 111

Fall 2016

Instructor: Dr. David B. Slavsky
Class Meetings: Lectures: T, Th 4:00-5:15 in Cudahy 202
                       Discussion: Th 5:15-6:05 in Cudahy 202
Office Hours: T 9:00-10:00 and 2:00-3:00; W: 1:30-3:00; Th 9:00-10:00 or at other times by special appointment
Contact Information: Cudahy 404, phone 773-508-8352, fax 773-508-3506, email
dslavsk@luc.edu
Text: Sears and Zemansky College Physics by Hugh D. Young, Philip W. Adams, and Raymond J. Chastain; 10 th edition, Pearson
Pre-Requisite: A grade of C- in Math 118 or higher level math course, or a score of 75 or higher on the ALEKS exam.
Course web page:
     http://luc.edu/faculty/dslavsk/courses/phys111/phys111-2016.shtml

Course Description

PHYS 111 is an introduction to the study of physics. This course will rely extensively on your knowledge of advanced algebra, geometry, and trigonometry. The main topics for this semester will include motion in one and two dimensions, forces and Newton's Laws of Motion, energy, momentum, the force of gravity and orbital motion, and collisions. These topics will be extended to include the effects of rotation and rotational motion. Finally, we will study oscillations and if time permits we will introduce the physics of materials and thermodynamics.

Grading

Your grade in the course will be determined by grades on homework assignments, two hour exams and a final exam.

Homework will represent an important component of this course: mastering the concepts and skills of this course (or any science/math course) requires in-depth investigation of the material. Homework assignments will provide the practice you will need to achieve fluency in physics. Homework will be assigned each week throughout the semester (except for those weeks in which we have hour exams). All homework assignments must be submitted in class on the due date. I will post solutions to the course website shortly after I collect homework; **no credit will be given for homework submitted after solutions are posted to the course website.**

Hour Exams will be given twice during the semester. The first will be on Thursday, 6 October and the second one will be on Tuesday, 22 November. The first hour exam will cover all material presented in class or assigned for reading from the beginning of the term through the day of the exam; the second exam will cover material done in class or

assigned for reading from approximately 13 Oct. through the date of the second exam, although for purposes of continuity, some material from the first half of the semester might appear on the second exam. The exact scope of the exams will be discussed thoroughly in class prior to exam dates.

The **final exam** will be given in this room (Cudahy 202) on Tuesday 13 December from 4:00-6:00 pm. The final exam will be comprehensive, covering everything we have studied during the semester.

Your **final grade** will be calculated according to:

Final average =

0.20 x homework avg + 0.40 x hour exam avg. + 0.40 x final exam

Final averages > 90% will earn an A for the course; final averages > 80% will earn a B for the course; final averages > 60% will earn a C for the course; passing will require a final average > 50%. I reserve the right to lower the thresholds for certain grades, in other words, final averages in the 80s might earn A's, but I will not under any circumstances raise the thresholds for grades.

Format for homework assignments

We will both spend a lot of time this term on homework. For homework assignments to serve the purposes we want, I ask for your help in facilitating my ability to grade them quickly and return them to you as soon as possible. Your assignments must follow these format rules:

1) Your homework sets must be legible (I can't grade what I can't read).
2) You must submit complete solutions showing all steps. In other words, I must be able to follow the logic you used to reach a final answer. Full credit can be given only for correct answers showing complete work.
3) You must use units consistently throughout the solution. (See examples posted on the course website)
4) If your assignment includes multiple pages (and there will be multiple pages), they must be stapled (not paper clipped, not pages folded over) so that pages do not separate as I work with them or transport them.
5) Write only on one side of the paper;

I try very hard to return homework by the next class period; these steps will save me a lot of time in grading and facilitate this goal. **NOTE:Assignments will lose 20% of their credit if they do not follow this format.** As noted earlier, homework assignments must be submitted in class on their due date; no credit will be given for homework submitted late.

Policy for missed exams and assignments

Students are expected to take exams on the scheduled dates and times. Make up exams for hour exams will be given if and only if one (or more) of the following conditions is met:

- Illness or hospitalization requiring physician's intervention.
- Death of a close family member.
- Unavoidable court date (including jury duty).
- Representing Loyola in an official capacity which requires your absence from class (i.e., debating team, model UN, intercollegiate athletics).
- Religious observance that prohibits normal work/school activities on that day.
- Off-campus interview for graduate or professional school.

Travel is not a valid reason for missing exams or assignments unless it is for one of the reasons listed above. In all cases, students must provide written, relevant and verifiable documentation of the circumstances.

 If homework is late due to one of the reasons listed above, I will work with the student to determine an appropriate alternate assignment.

Policy Regarding Academic Dishonesty

It is my expectation that each of you will continue to meet the high standards of conduct that I have come to expect from Loyola students.

Homework must be the result of your own effort. While it is often very useful for students to work together on homework, be careful that the work you submit must clearly be the result of your own efforts. Students will receive a grade of zero for the first instance of copied homework during the semester; a second such instance will result in a grade of F for the course.

Academic dishonesty on exams, which includes specifically but not exclusively copying from another's paper, using crib notes, transferring information to another student during the exam, will result in a grade of F for the course.

In all cases of academic dishonesty, I will send copies of the material to the Dean's Office for inclusion in your permanent Loyola file.

You can review Loyola's policies on academic honesty by reading the following links:

www.luc.edu/education/academics_policies_integrity.shtml

Please see section below for the policies regarding use of electronic devices in class.

Use of electronics during class period

To maintain the proper atmosphere during class, all electronic devices must be turned off and stored out of sight during class period. If you wish to take notes on a laptop (which I imagine would be very difficult given the extensive use of diagrams, equations and special symbols), please sit toward the back of class so as not to disturb your neighbors.

Prior to the hour exams and final exam, I will remind you to turn off and store out of sight all electronic devices. The visible presence of any electronic device (with internet and/or communications capabilities) will constitute academic dishonesty and will result in a grade of zero on the exam.

Accommodations for Persons with Disabilities: Students who have disabilities which they believe entitle them to accommodations under the Americans with Disabilities Act should register with the Services for Students with Disabilities (SSWD) office. To request accommodations, students must schedule an appointment with an SSWD coordinator. Students should contact SSWD at least four weeks before their first semester or term at Loyola. Returning students should schedule an appointment within the first two weeks of the semester or term. The University policy on accommodations and participation in courses is available at: http://www.luc.edu/sswd/

General Comments (or how to succeed in this course)

This is a course where students are encouraged to be active participants in the study of physics. I urge you to ask questions in and/or out of class; don't leave class without asking those nagging questions that you can't figure out (but assume you will get upon further reflection doing homework). This is material that requires thought and practice, and the more ways we have of analyzing a problem the more we can expand and enhance your understanding of how to frame and solve interesting problems in physics.

In past years, my syllabus has included the statement: "I will give reading assignments with the expectation that you will have read the material prior to coming to class." There are two important elements in this statement that I would like to spend time discussing on the first day of class.

The first involves class attendance. I know all your professors extol the virtues of class attendance, but having taught introductory and advanced physics and math courses for a number of years (several decades now, actually), I have empirically observed the high correlation between unsatisfactory outcomes and absenteeism. In other words, if you miss a lot of class, you are likely to receive a poor grade or have to withdraw from the course.

The second describes *how* you should read a math or physics text. While learning new techniques of solving problems is important, the focus of your studies should be concentrated more on deriving equations and learning how physical conditions can be expressed in mathematical form. Thus, as you read the text, you should have a notebook or pad in which you can reproduce the derivations the author is describing By deriving each result in the text, you will gain deeper understanding of the topic, and you will no longer need to (or feel the need to) resort to rote memorization of equations. As an example, refer to of the text which derives a simple relationship between final speed, initial speed, acceleration and distance traveled. I understand that there is a tendency for one's brain to glaze over when the book derives equations and jump down to the final equation. However, if you are interested in acquiring a deep understanding of physics (and a correspondingly high grade in this class) you will study the derivation of this (and all other equations) and be able to reproduce them on your own. Asking you to derive equations is fair game on exams.

 I will also make use of email and the course website to communicate with the class in aggregate, so please check your (Loyola) email and the course website frequently.

There are a number of resources available to help you achieve success in this course. Always feel free to contact me and come to my office. If my posted office hours are not convenient for you, I will gladly work with you to find a mutually convenient time. In addition, there is drop-in help in the Physics Help Room (Cudahy 316, staffed by physics majors). The times will be announced but they are usually there in late afternoons M-F.