

Physics 5: Concepts in Physics

Spring Semester 2017

SYLLABUS

As a fundamental science, physics is at the heart of modern science and technology. Understanding basic physical principles and concepts is the starting point towards comprehending – or at least being able to talk about – state-of-the-art physical topics and beyond - think, for example, environmental issues.

This course will at most rely on elementary algebraic calculations. We will not use a more mathematical treatment like calculus. You do not need to be a medical doctor to speak about trendy medical topics, or to enjoy a program on the radio about a new surgical technology, or a new medication. In the same way, you do not need to be a high energy physicist to read about the fundamental particles of our universe.

My wish is that whatever your future profession will be, if in a couple of years somebody will ask you something like “Why do objects drop to the ground?”, you’ll be able to speak about gravity, and maybe mention gravitons and quantum field theory. Isn’t it fascinating to be aware of the extension of human knowledge, maybe even in a fairly sketchy way? We do it all the time, let’s do it with physics!

Instructor

Dr. Paola M. Cereghetti

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Office: LL 410

Office hours: After class, or by appointment. Please e-mail me, thanks!

Class Meetings

Monday, Wednesday, and Friday: from 11:10am to 12:00pm in room LL316

Thursday’s Lab: from 1:10pm to 4:00pm in room LL221 with T.A. Jesse Raffield

Reading Material & Class notes

This course does not follow any textbook in particular, reading material or class notes will be given out weekly. If you wish more material, please ask me, thanks!

Homework

Homework will be assigned weekly, it is meant to reinforce and deepen the material learned in class. The HW due date will be written on the HW sheet. HW solutions will be provided: Please make sure that you understand each problem that you have not been able to complete correctly.

Laboratory

There is a laboratory section for this course that meets once a week. The first lab is this week and meets in LL 221 on Thursday, from 1:10pm to 4 pm, with Jesse Raffield your lab T.A..

Attendance

Attendance is mandatory and will count towards your course grade. Should you miss a class for a valid reason or other extenuating circumstances: 1. Please let me know, possibly in advance, an e-mail is enough 2. Talk with me to discuss your absence and to make sure you understand the material you missed.

Good Behavior

- Leave class for a few minutes (or for good) only if you are physically ill or if you get notified that something serious has happened. To leave class just to get a sip of water (unless you are choking, of course) or to talk on the phone with your friend is not polite. If for any reason you need to regularly leave class for a few minutes, please let me know, otherwise I will think you are always bored and are taking a stroll ☹
- The use of cell phones and texting is not allowed during classes and labs. Honestly, even if you try to hide your phone while you are texting, professors can see you, its kind of awkward, oooops!
- It is very easy for a professor to distinguish between students taking notes on a computer and students using a computer to browse and wait for the end of class... I know, I am annoying ☺
- Are you terribly bored with the class? Please talk with me, and we will find a solution.

Tests

There will be 2 hour exams (one on Thursday, February 23, 2017, and one on Thursday, April 13, 2017), and a final exam (the date will be decided later in the semester by the registrar's office). The hour exams and the final exam are closed book.

Presentations

You will need to prepare a presentation for the class on a topic about physics that you are particularly curious about. This task will include:

- Preparing a 10-20 minutes computer-based presentation with slides
- Preparing 2 printed pages of class notes to share with everybody
- Preparing 5 multiple choice questions (with solutions) that will be included in the final exam.

Grading:

Your numerical grade in the course will be determined as follows:

Homework	125
Lab	125
Attendance	50
2 Hour Exams	150
Presentation	150
Final Exam	100

Total	700

☞ If you can justify with an official written excuse your absence during the hour exam, the grade for the hour exam missed will be taken from the grade in the final exam paper.

Accommodations for Students with Disabilities:

If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:

Lehigh University endorses The Principles of Our Equitable Community [http://www.lehigh.edu/~inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf]. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.