

# **PHYSICS 131 – Conceptual Physics**

**FALL 2018**

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- Instructor:** Luis Anchordoqui, Gillet 132, phone: 347-577-4119, E-mail: luis.anchordoqui@gmail.com
- Texts:** You may use any textbook to complement the lecture notes and help you understand the material. However, a textbook is not required.
- Course website:** <http://www.lehman.edu/faculty/anchordoqui/131.html>
- Lectures:** Tuesdays and Thursdays 12:30 – 1:45 PM, Gillet 331. Lectures begin August 28, 2018.
- Office Hours:** Tuesdays and Thursdays 4:00 PM - 4:45 PM
- Laboratory:** Attendance to the 3 laboratories is mandatory. Department policy is that students who miss more than two labs will fail the course. Labs can only be made up for documented medical emergencies, and only during the week they are originally scheduled. If you miss a lab let me know as soon as possible.
- Worksheets:** Homework sets are available on the course website. Each homework set consists of questions used as worked examples in lecture, questions covered during discussion, and questions assigned as homework exercises.
- Tests:** Three tests will be given during the semester (see schedule on page 3).
- Final:** There will be a comprehensive final exam; Tuesday December 18, 2018 (11:00AM to 1:00 PM). **The final is mandatory** and you are responsible for making sure that you can attend at this time.
- Grading:** The overall course grade will be determined as follows:
- 45% - midterm exams (20% each)
  - 25% - comprehensive final exam
  - 15% - quizzes
  - 15% - laboratories

## **How to be successful in Physics 131 — PLEASE READ CAREFULLY**

1. This is not a correspondence course; attendance at lectures and discussions is highly encouraged. Indeed attendance will be taken at each class. A sign-up sheet will be passed around.
2. Make sure you visit the course website regularly. Check the announcements. You will have to download a set of problems every week.
3. TESTS: test problems are loosely based on those you will find in the homework sets. Please note that this does not mean these problems will simply be repeated on tests. Please check the schedule of tests for conflicts with religious observance. Please let me know ASAP if you see any conflicts; a different time will be arranged so that you can take the test. Make-up tests will be given only for valid reasons.
4. QUIZZES: a short (about 10-15 minutes) quiz based on the material covered in recent lectures will be given at the end of every lecture.
5. Make sure you bring a scientific calculator to lecture and discussion. You will need a calculator during tests.
6. Please contact me immediately if you think that a genuine mistake has occurred in the grading of tests. Clerical errors in grading will of course be rectified as soon as possible.
7. Students with special requirements/learning disabilities should see me as early as possible during the semester. **Note** that it is the responsibility of students with special accommodations to contact the instructor as early as possible to make the appropriate arrangements for testing. Please note that I cannot allow students to take tests under conditions different from those experienced by the rest of the class (extra time, separate room, etc.) *unless they have the appropriate paperwork (VISA form) from the Student Accessibility Center*. The Student Accessibility Center will issue formal instructions to me about how students with disabilities are to be accommodated.

### **General Education Requirement (GER):**

This course carries GER credit in the area of Natural Sciences. You will explore the foundations underlying our knowledge of the physical world, with the goal of gaining an understanding of the physical laws governing matter, energy, and physical (as well as chemical and biological) phenomena. Physics is not about memorizing facts or formulas, but about developing the conceptual framework to connect experiments to the models, theories, and physical laws used to describe the natural world, including how experimental science can be used to distinguish among competing theories. Throughout the course – in classes, discussions, and through homework – you will be required to critically assess the presented concepts and be able to apply your knowledge to the solution of problems.

### **Grading policy:**

Letter grades will be assigned according to the guidelines

A = 90 - 100  
B = 80 - 90  
C = 65 - 80  
D = 50 - 65  
F = below 50

The cutoffs for +'s and -'s will be decided at the end of the semester.

### **Tutoring:**

Tutoring is available in the Science Learning Center, Gillet 133. Textbooks and study questions are available. Hours for this course will be posted on the door.

## *Provisional Course Outline*

*(Please note this may be revised during the course to match coverage of material during lectures, etc.)*

<b>August 28:</b>	Lecture 1: Conservation of energy
<b>August 30:</b>	Lecture 2: Forms of energy
<b>September 4:</b>	Homework 1
<b>September 6:</b>	Lecture 3: Thermodynamics
<b>September 11:</b>	(no classes)
<b>September 13:</b>	Lecture 4: Waves as energy transfer
<b>September 18:</b>	(no classes)
<b>September 20:</b>	Lecture 5: Electricity and magnetism
<b>September 25:</b>	Homework 2
<b>September 27:</b>	Lecture 6: How light works
<b>October 2:</b>	Homework 3
<b>October 4:</b>	Lecture 7: Structure and properties of matter
<b>October 9:</b>	Homework 4
<b>October 11:</b>	Lecture 8: Radioactivity
<b>October 16:</b>	Lab 1: Solar energy and the inverse square law
<b>October 18:</b>	Midterm-exam 1
<b>October 23:</b>	Homework 5
<b>October 25:</b>	Lecture 9: Birth and death of the sun
<b>October 30:</b>	Lab 2: Ohm's law
<b>November 1:</b>	Lecture 10: Nuclear processes
<b>November 6:</b>	Homework 6
<b>November 8:</b>	Lecture 11: Spacetime
<b>November 13:</b>	Homework 7
<b>November 15:</b>	Midterm-exam 2
<b>November 20:</b>	Homework 8
<b>November 22:</b>	(no classes, Thanksgiving week-end)
<b>November 27:</b>	Lab 3: Laws of reflection and refraction
<b>November 29:</b>	Lecture 12: Across the universe
<b>December 4:</b>	Homework 9
<b>December 6:</b>	Homework 10
<b>December 11:</b>	Midterm-exam 3