University of South Carolina
Carolina Core

PHYSICS 202
GENERAL PHYSICS II

BULLETIN INFORMATION
PHYS 202 - General Physics II (3 credit hours)
Course Description:
Continuation of PHYS 201; includes electromagnetism, relativity, quantum physics, atomic and nuclear physics.
Prerequisites: a grade of C or better in PHYS 201

SAMPLE COURSE OVERVIEW
TBA

ITEMIZED LEARNING OUTCOMES
Upon successful completion of Physics 202, students will be able to:

1. Identify the concepts appropriate to analyzing situations involving physics.
2. Demonstrate the use of physical laws to solve quantitative problems in areas of: electric and magnetic fields and forces, simple circuits, energy conservation, optical properties of materials, the wave nature of light, quantum physics, and relativity.
3. Apply these concepts to a wide range of phenomena and examples from everyday life that may include topics such as: electrical devices and safety, transmission of information with electromagnetic waves, power generation, and imaging with telescopes and microscopes.
4. Demonstrate use of scientific methods in their solutions to problems, following techniques modeled in class by the instructor.

SAMPLE REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS

1. *Contemporary College Physics* (Package= two volumes), Special USC edition (=updated third edition), Jones and Childers.

SAMPLE ASSIGNMENTS AND/OR EXAM

1. **Three one-hour tests**
2. **Final exam**
3. **LONCAPA Homework:** We will be using the "Learning Online with Computer Assisted Personalized Approach (LONCAPA)" system to distribute and grade the homework for PHYS 202. Approximately once a week, homework assignments will be posted on: http://loncapa2.physics.sc.edu. You will have about a week to work on the problems and submit your answers. Normally you will have 12 attempts for each problem. It is a very good idea to get started on the homework as early as possible in order to figure out what topics you are having trouble with so that you can obtain

assistance. Your goal should be to achieve a 100% score on the homework. Test problems will look a lot like the homework problems, so mastering the homework is key to getting a good grade in the course.

a. There are plenty of online solutions available for most LonCapa problems. The more you use these solutions instead of working through the problems yourself, the less likely you are to do well on the tests.
b. The extra hour associated with PHYS 202 that shows up on your schedule is referring to your assigned LONCAPA tutoring session. Attendance at these sessions, which meet in PSC 208, is not mandatory, but is highly recommended. There should always be a professor present who will be able to assist you in understanding the physics behind your homework, and to help you with specific problem solving techniques.

SAMPLE COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS

Week 1:	Ch 16	Introduction; Electric Charge/ Coulombs Law/Electric Field
Week 2:	Ch 16/17	Gauss' Law/ Electric Potential
Week 3:	Ch 17	Capacitors
Week 4:	Ch 18	Current, Resistance, Resistivity, Power and Energy
	Exam 1: Chap 16-18	
Week 5:	Ch 18	Circuits
Week 6:	Ch 19	Magnetism
Week 7:	Ch 19/20	Magnetism/ Induction
Week 8:	Ch 20	Induction
Week 9:	Ch 20	Induction
	Exam 2	
Week 10:	Ch 22	Geometrical Optics
Week 11:	Ch 23	Optical Instruments
Week 12:	Ch 24	Wave Optics
Week 13:	Ch 24	Wave Optics
	Exam 3	

Week 14: Ch 25 Relativity

FINAL EXAM According to University exam schedule