

**PHYSICS 201
GENERAL PHYSICS I**

BULLETIN INFORMATION

PHYS 201 - General Physics I (3 credit hours)

Course Description:

First part of an introductory course sequence. Topics include mechanics, wave motion, sound, and heat. No previous background in physics is assumed.

Prerequisites: MATH 115, or MATH 122, or equivalent

SAMPLE COURSE OVERVIEW

TBA

ITEMIZED LEARNING OUTCOMES

Upon successful completion of Physics 201 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: motion, force, energy, momentum, and conservation laws.
3. Apply these concepts to a wide range of phenomena and examples from everyday life that may include topics from: motion of objects, thermal physics, fluids, oscillations, waves and sound.
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 EXAMS

2. Three one-hour tests
3. Final exam
4. LONCAPA Homework: LONCAPA Homework: We will be using the "Learning Online with Computer Assisted Personalized Approach (LONCAPA)" system to distribute and grade the homework for PHYS 201. 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 201 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 2 Introduction to the Course; Graphing Motion

Week 2: Ch 2 Motion in One Dimension
Labs Begin, LonCapa tutoring begins.

Week 3: Ch 3 Motion in Two Dimensions

Week 4: Ch 4 Force and Motion

Week 5: Finish Forces / Review
Exam 1

Week 6: Ch 5 Circular Motion and Gravitation

Week 7: Ch 6 Work and Energy

Week 8: Ch 7 Momentum

Week 9: Ch 8 Conservation Laws
Exam 2

Week 10: Ch 9 Angular Momentum

Week 11: Ch 10 Fluids

Week 12: Ch 14 Periodic Motion

Week 13: Exam 3

Week 14: Ch 15 Waves and Sound

Week 15: Last Class, Final Capa Set due at Midnight

FINAL EXAM according to University exam schedule