

**Orange County Community College  
Middletown, New York**

**35106- General Physics II**

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**35\*106 Spring 2007**

3 lect., 3 lab., 4 cr.

This course is a continuation of 35105. It is a calculus-based treatment of wave motion, electricity and magnetism, optics, Special relativity, quantum theory, atomic and nuclear physics.

**Prerequisite: Physics 35-105. Corequisite 38-206**

**TEXT AND MATERIALS**

This course will cover the topics presented in chapters 11-12 and 16-31 in the text: Serway & Jewett, Principles of Physics (Third Edition), (Philadelphia: Harcourt Publishing, 2002). The student will also need a ruled laboratory notebook and a scientific calculator. Laboratory materials will be distributed throughout the semester.

**RELATIONSHIP TO PROGRAMS**

Physics 35106 is designed for the computer science, physical science or biological/health related science major. It is also an excellent course for someone planning on a career in high school science or mathematics education. This course requires calculus. There is a parallel non-calculus-based course entitled General Physics 35101-2. If in doubt about the proper physics course to take, consult with your advisor or with the department chair.

**COURSE OBJECTIVES**

The student who successfully completes this course can

- demonstrate an understanding of methodologies employed by natural scientists.
- employ observation, hypothesis development, measurement and data collection on an appropriate level.
- describe the importance of modeling in the pursuit of scientific understanding.
- move fluently through the Systeme Internationale rationalized MKS units.
- explain sound as a wave phenomenon involving energy transfer.
- relate the physics of sound to the creation of music.
- explain the fundamentals of electricity and magnetism as used in their everyday life.
- appreciate the elegance of Maxwell's Equations.
- place the revolution of modern physics in an historical context.
- adequately explain the role that atomic and nuclear forces play in the universe.
- translate physical problems into mathematical expressions and solve resulting equations.
- record laboratory data and explain results in a clear and professional fashion.

- reduce data using spread sheets and prepare graphs using the computer.

## **GRADING SYSTEM**

The grading for this course will be determined as follows

Exam # 1 --	15 %
Exam # 2 --	15 %
Exam # 3 --	15 %
Final Exam --	20 %
Lab. Work --	25 %
Homework/Quizzes	10 %

For the most part the exams will consist of 10 multiple choice question and 4 free response questions. The final examination will consist of two parts: Chapters 28, 29 and 30 plus a cumulative section which will be multiple choice and encompass the entire course. The cumulative section of the final will be an open notebook examination. Homework is an ongoing project. At the beginning of each lecture questions from the previous lecture's content and homework will be addressed. You cannot be successful in this course without dedication to the homework assignments. Homework assignments will turned in and graded before the start of each examination. Late assignments will not be accepted. Lab notebooks will be collected each Monday evening and returned to you in time for Wednesday's lab.

## **ATTENDANCE AND WITHDRAWAL**

Perfect attendance is absolutely assumed in this course. Without this attendance and dedication to the homework one will not be successful in Physics. The student's grade will reflect any lack of attendance. If you will miss a class please send me an email informing me of that fact.

It is the student's responsibility to speak with the instructor and withdraw from the course if things are not going well. The instructor will not withdraw a student unilaterally.

## **Office Hours**

I will be available every evening that class is in session from 5:30 to 6:00 to answer any questions that you may have concerning the subject matter. The site will depend on room availability.

## **SUPPORT SERVICES**

Tutoring services are available in the learning resource center. Keep in mind that the instructor is also part of your "support service."

There are support services available for students with disabilities. These services can be accessed through student services. You must inform the instructor regarding any necessary accommodations for the course.

The following texts are on reserve in the Library. They can be very helpful to you if you take advantage of them.

**Arthur Beiser, Shaums Outline, Applied Physics.** The solved problems in this book are at a lower level than the problems in the text. They are good confidence builders and can be helpful in this regard. Reserve # 180

**Fredrick Bueche, Shaum's Outline of College Physics.** This text has excellent, clearly worked out problems related to every section of the text. Reserve # 179

**Alvin Halpern, Schaums Outline -- Beginning Physics I -- Mechanics and Heat.** This text is similar to Reserve # 179, but contains only material covered during the first semester of 35101 and 35105 (General Physics).

**Serway and Faughn, College Physics** and **Faughn & Tigue, Instructors Manual With Solutions for Serway and Faughn.** These two books should be used together. The complete solutions manual matches this non-calculus text and this resource should be helpful - especially if you have missed some of the material the first time around. (Reserve # 183)

#### **NOTE REGARDING CLASS SYLLABUS**

The following schedule should be viewed as tentative to the extent that some adjustments may seem advisable as the course progresses.

#### **CANCELLED CLASSES**

The early spring semester can be disrupted by cancellations due to snow and ice. If a class is cancelled it is normally made up on the Friday of the *following* week. You can sign up on line for email notification of cancelled classes.