

Foundations of Physics - PHYS 1000

SYLLABUS - SPRING SEMESTER, 2007

Lecture: M,W,F - **10:00 am - 10:50 am**

Instructor: Dr. Edward Thomas, Jr.
Associate Professor, Physics Department

Office Hours: M: 11:00 am - 12:00 pm
W: 1:30 pm - 2:30 pm
If I'm in my office and not busy - otherwise, schedule an appointment with me.

Office: Allison Laboratory - [Room 101](#)

E-mail: etjr@physics.auburn.edu

Website: <http://narn.physics.auburn.edu/etjr/class-s07.html>

TA: Jennifer Dart

Textbook(s):

"Conceptual Physics", Tenth Edition, Paul G. Hewitt

"PHYS-1000 Laboratory Manual" - Chad Rodekohr & Michael Bozack

Class lecture notes - posted on class website

Course Objectives:

The Foundations of Physics course provides students with a basic understanding of the principles and laws that govern the physical world. It is a unique survey course that covers all major branches of physics - from classical kinematics to relativity - that allows students to experience the diverse topics that are fall under the topic of physics. While the course focuses primarily on concepts, students will be expected to solve simple math, geometry, and algebra problems.

World Wide Web Usage:

The class website will be used EXTENSIVELY throughout this course. Selected examples, solutions to exams and quizzes, and selected homework will be placed on the course website. ALL STUDENTS are expected to make use of the Web to remain informed of activities in the course. This policy is **not** intended to place an undo burden on students. It **IS** intended to facilitate 24 hour access to information about the class. If you have any questions regarding use of the Web, please contact me as soon as possible.

Course Topics:

This course covers four major physical concepts:

1. **Motion** - linear and non-linear motion, laws of motion
2. **Conservation & Gravitation** - conservation principles of momentum and energy, discussion of classical gravity
3. **Matter** - constituents (atoms, molecules, etc) and states of matter (solid, liquid, gas, plasma)
4. **Electromagnetism** - electricity, magnetism, and light

This course will introduce students to many ideas from "modern" physics - areas of study that developed primarily in the in the 20th century. A new feature of this course will be the use of "*Physics and Society*" lectures throughout the semester. These lectures will attempt to make connections between the scientific topics discussed in the course and our modern society.

Success in the course:

To be successful in the course there are three key elements:

(1) **ATTENDANCE:** While much of the information in this course can be found in the textbook, the lectures will often present insights and perspectives that are not in the text. Most of the material on quizzes and exams will come directly from the lectures. Students are solely responsible for obtaining notes for missed lectures. Lecture notes will generally be posted online. However, because I often make changes to the lecture notes during the lectures, these changes will often NOT be made to the online notes. It is your responsibility to make sure that you have the most current set of class notes.

(2) **PROBLEM SOLVING** - In order to properly understand the material in physics and to prepare for examinations, you will need to spend time doing the assigned problems. For the vast majority of students, there really is NO substitution for this.

(3) **READING** - Since this course is primarily a concepts-based course, it will require a large amount of reading - both of the textbook and of other documents (including web / internet-based documents). Reading course material prior to lectures will greatly enhance the amount of information that you will retain from the class lectures. It is vital that students keep up with all of the assigned reading.

A few words about the Lecture Notes

- The class lecture notes **ARE NOT** a substitute for the material in the textbook.
 - The lecture notes **DO NOT** contain all of the details that are given in the textbook.
 - The lecture notes **ARE** a supplement to the textbook material.
 - The lecture notes **DO** provide additional information, explanations, and examples that may not be in the text.
 - Relying on the lecture notes **WITHOUT** reviewing the textbook or without attending lectures will not be a successful method for passing this class.
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Course Policies:

1. **Quizzes and Homework:** (10%) - The **primary method** for success in the physics course is to engage in problem solving. Homework problems will be assigned for each chapter covered in the textbook. Solutions to selected homework problems will be posted on a regular basis to the class web site.

Homework problems will be assigned using the online package WebAssign. Each student is required to purchase a WebAssign login card from the University Bookstore in order to access and complete homework assignments. Homework assignments will typically consist of 6 to 12 problems and questions. Each assignment will have approximately 7 to 10 days for completion.

2. Laboratory: (10%) - The laboratory and small-group sessions are an integral part of the physics course. Laboratories will be evaluated on the basis of the performance of the experiments and quality of your laboratory reports.
3. Exams: (54%) There are **four** scheduled exams throughout the semester. The **highest three** exam scores will count toward your grade.

Preliminary Exam Dates:

Feb. 2 - Exam 1

Feb. 23 - Exam 2

Mar. 23 - Exam 3

Apr. 25 - Exam 4

4. Final Exam: (26%) The final exam will be cumulative. The final will be generally based upon previous exam questions, example problems from the text and lecture, and homework problems. The final exam is scheduled for:

Monday, May 7, 2007 from 11:00 am - 1:30 pm

Exam Grading Policy:

- Once an exam has been returned to students, you will have a "grace period" (which will be specified when the exam is returned and on the class website) in which to see me regarding any type of errors/mistakes/misgrading, etc. on that exam. This includes indentifying information as well (e.g., forgetting to put your name, error on scantron sheet, etc.).
 - *It is the students' responsibility to address any and all questions about their exam during the grace period after the exam.* After the grace period, I will review exams, but I will not change any exam grade.
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Course Schedule:

The course schedule can be found [HERE](http://narn.physics.auburn.edu/etjr/teaching/phys1000-S07/phys_sched_s07.html): http://narn.physics.auburn.edu/etjr/teaching/phys1000-S07/phys_sched_s07.html

CHANGES TO SYLLABUS: The instructor reserves the right to change any of the policies, statements, or rules given in the syllabus, course schedule, or other documents on this website throughout the course. If any change is made, the students will be immediately informed.
