

Syllabus for
Introduction to Modern Physics
PHY 3101, Spring 2000, Sect. 3798

Lecturer: Prof. Darin Acosta
2035 New Physics Building
Tel: 846-3144
E-mail: acosta@phys.ufl.edu

Class Hours: M, W, F Period 3 (9:35–10:25 am), 1002 New Physics Building

Office Hours: Thursday, 9:30–11:30am, or any other time you can catch me

Textbook: *Modern Physics*, Third Edition, Paul Tipler and Ralph Llewellyn

Web Page: <http://www.phys.ufl.edu/~acosta/phy3101/>
Includes schedule, homework assignments, solutions, lecture notes, etc.

Grading: **Weekly homework** counts towards **20%** of the final grade
(~12 given, lowest two scores dropped).
Quizzes count for another **20%**
(~5 given, lowest score dropped)
Two midterms contribute **30% (15% each)** to the final grade
Final exam is worth **30%**
Extra credit is worth a maximum of 8% (about ½ of a grade division).
Details listed on course web page. Requires professor approval.

Overview:

This course spans the physics achievements of the 20th century, and soon those of the 21st century! It covers Einstein's theories of relativity and the foundation of quantum mechanics, which modify Newtonian mechanics in the realm of very high velocities and very small dimensions respectively. The latter part of the course is a survey of special topics such as nuclear physics, particle physics, and cosmology—all of which have their roots in relativity and quantum mechanics. Each of these special topics could be a course by itself, so we will cover only the highlights. In a general sense, you could consider *Modern Physics* as preparation for the physics described in *Scientific American* articles.

The course will cover approximately one chapter of the text each week, so the pace will be high. Moreover, physics is about solving problems. Homework will be assigned each week, and quizzes and exams will be given every other week. Homework will be due Monday, but can be turned in late by Wednesday (marked down 25%). Quizzes will usually be given on Friday, and the midterms on Wednesday. The final exam will be comprehensive, but quizzes and midterm exams will cover material only since the last test. There will be no make-up exams or quizzes unless there is a documented dire emergency. All tests are closed book, but you may bring a calculator and one 8.5"×11" sheet of paper with notes on both sides. A formula sheet will be provided for each exam.

This course assumes that you have studied Newtonian mechanics and electromagnetism in previous calculus-based introductory physics courses. A "Math & Physics Refresher" is available

PHY3101 Syllabus

on the course web page that summarizes the math and physics you should know or learn in preparation for this course.