

**COLORADO STATE UNIVERSITY
DEPARTMENT OF PHYSICS**

**PH 561 – Elementary Particle Physics
Spring Semester 2012
Course Syllabus**

- Instructor:** Prof. Norm Buchanan
Office: D119 Engineering (Physics Building)
Phone: 491-6192
Email: Norm.Buchanan@colostate.edu
- Textbook:** Quarks and Leptons: An Introductory Course in Modern Particle Physics, F. Halzen and A. Martin, (Paperback Edition)*
- Lectures:** Monday 14:00-15:50, Wednesday 14:00-14:50
Engineering Room D102
- Office Hours:** 11:00 - 12:00 PM on Wednesdays starting the second week of the semester, subject to change, or by appointment.
- Prerequisites:** PH 451 or consent of the instructor
- Grading:** Problem sets - 65% (see details below)
Term paper (due no later than the start of class Wed, Apr 25th) - 25%
Oral Presentation of Term Paper - 10%
- Description:** This course will provide an introduction to the ideas of experimental particle physics. Topics will include:
- Historical overview
 - Review of relativistic kinematics
 - Feynman diagrams
 - Quantum electrodynamics (QED)
 - Weak interactions
 - Quantum chromodynamics (QCD)
 - Particle accelerators and detectors (if time permits)

Other topics may be covered if time permits.

* Materials from sources other than the Halzen and Martin text will be covered. I will supply a list of recommended reading.

Attendance to the lectures is expected.

Important – Read the following carefully

Homework is a significant component of the course and each student must submit their own work. Cheating in any form will not be tolerated. Cheating on either homework or the term paper will result in a failing grade for the course and may lead to further disciplinary action. Each assignment must be handed in with a reference declaration stating the sources/references used in completing the assignment. Homework submitted without a reference declaration will not be graded.

ACADEMIC INTEGRITY POLICY

PH 561

This document summarizes generic rules for student conduct regarding homework and exams in this course.

This is considered to be part of the course syllabus, and it is official course policy, so you need to read all of it.

Failure to abide by these rules will be considered academic dishonesty and will be dealt with according to university policy.

Homework

Any homework that you turn in for credit is to be your own work.

You may work on the homework with other students in the same class, and you may check with other students in the same class to make sure that your final answers agree, but the homework that you turn in is to be written up on your own.

This includes work such as the evaluation of an integral, the solution of a differential equation, or the preparation of a plot. You may not rely on someone else to look up an integral for you or to generate a plot for you.

If you get help from someone other than the course instructor, you need to acknowledge that help in writing as part of what you turn in. This includes help from other students in the class.

The homework that you turn in may not be written up while you are working in a group, nor may it be copied from a blackboard, whiteboard, etc. after a joint effort (if you understand the work done in a group, then you will be able to write up this work later on your own).

It is never acceptable to look at another student's written homework solutions before your homework has been turned in.

You may not look up solutions to assigned homework problems that were prepared by others, including other persons, other texts, solution manuals, or the internet.

You may not copy or trade problems with other students.

Exams

Exams are to be your own work, and no consultation with other persons is allowed.

You are not allowed to use any materials (e.g., books, notes, math tables, calculators, electronic devices) unless specifically authorized to do so by the instructor.

It is never acceptable to copy work from another student.