

**Lecturer:**

Prof. Gil Paz, Room 360 Physics Building  
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**Lecture Time:**

Monday, Wednesday, Friday 1:55 pm - 2:50 pm, Room 185 Physics Building

**Suggested Texts:**

David Griffiths, Introduction to Elementary Particles (Wiley; 2nd edition)  
F. Halzen and A. D. Martin, Quarks and Leptons (Wiley; 1st edition)

**Office Hours:**

Any time by appointment.

**Grading:**

- Homework (70% of the total grade). Weekly assignments will be handed each Wednesday. They must be handed back after two weeks in the Wednesday lecture. The deadline is *firm*. Late homework will not be accepted. You should submit 80% of the homework to get a passing grade.
- Final project (30% of the total grade). The final project will consist of a short paper  $\approx 5$  pages + 20 minutes talk at the end of the semester. You can choose your own topic, after confirming with me, or choose from a list of topics I will suggest. You should decide on the topic of the final project by the end of spring break, i.e. Monday, March 18 2013.

**Grade:** The grade scale is as follows:

Letter grade	Score	Letter grade	Score
A	91-100	B–	70-74
A–	85-90	C+	65-69
B+	80-84	C	60-64
B	75-79	F	< 60

## Topics:

We will largely follow Griffiths's textbook

- Introduction (Introduction, chapter 1)
- Elementary particle dynamics (chapter 2)
- Symmetries (chapter 4)
- Bound States (chapter 5)
- Relativistic kinematics (chapter 3)
- Feynman calculus (chapter 6)
- QED (chapter 7)
- QCD (chapter 8)
- Weak interaction (chapter 9)
- Gauge theories (chapter 10)
- Neutrino Oscillations (chapter 11)
- Beyond the standard model (chapter 12)