

SYLLABUS

PHY 7060,

Winter 2018,

Prof. SHAH

Instructor: Prof. Nausheen R. Shah

Office: 362 Physics

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Office Hours: F 2-3 pm or by appointment (subject to change).

Class Details: 01/08/18 - 05/01/18

Location and Time: 0185 Physics Bldg, Tu, Th 1:00 - 2:15 PM

Suggested Texts:

David Griffiths, Introduction to Elementary Particles (Wiley, 2nd Edition)

Michael Peskin, <http://www.slac.stanford.edu/~mpeskin/Physics152/theBook.pdf>

Grading:

- Homework Quizzes (70% of total grade)
 - Weekly assignments will be posted on Blackboard Thursday (starting second week of classes, Jan 18th 2018) and you will have one week to attempt the problems. These assignments will not be collected or graded. Instead, at the beginning of each Thursday lecture we will have a ~10-15 minute quiz which will be a randomly selected problem (or part of one) from the assignment that week. There will not be any make-up quizzes.
- Final Project (30% of total grade)
 - The final project will consist of a short paper ~ 5 pages + 15 minute talk at the end of semester. You can choose your own topic, after confirming with me. You should decide on the topic of the final project by the end of the spring break (i.e. Monday March 19th 2018).

Grade determination:

A : 90+ %,
A - : 85-89%,
B + : 80-84%,
B : 75-79%,
B - : 70-74%,
C+ : 65-69%,
C : 60-64%,
F : below 60%

Topics:

We will mostly follow Griffith's textbook:

- Introduction (Chap 1)
- Elementary Particle Dynamics (Chap 2)
- Symmetries (Chap 4)
- Bound States (Chap 5)
- Relativistic kinematics (Chap 3)
- Feynman Calculus (Chap 6)
- QED (Chap 7)
- QCD (Chap 8)
- Weak Interactions (Chap 9)
- Gauge Theories (Chap 10)

If time permits:

- Neutrino Oscillations (Chap 11)
- Beyond the Standard Model (Chap 12)