

Syllabus for PHYS8150 (Spring-2007)

Advanced Quantum Mechanics

Course Objectives:

Relativistic extension of non-relativistic Quantum Mechanics. The emphasis is primarily on the quantum theory of radiation, the Dirac theory of leptons, and quantum electrodynamics.

Some Text Books:

Relativistic Quantum mechanics, Bjorken and Drell vol.I

Advanced Quantum Mechanics, Sakurai

An Introduction to Quantum Field Theory, Peskin and Schroeder

Topical Outline:

- I. Classical Fields.
- II. Quantum Theory of Radiation.
- III. Relativistic Quantum Mechanics of Spin-1/2 Particles.
- IV. Covariant Perturbation Theory.

Grading: (Mid-Term + Final)/2

The final letter grading scale: 90% – 100% : *A*; 85% – 90% : *A-*; 77% – 85% : *B+*; 70% – 77% : *B*; 65% – 70% : *B-*; 60% – 65% : *C+*; 55% – 60% : *C*; 50% – 55% : *C-*; 45% – 50% : *D*; < 45% : *F*.