

PHYS 852 Quantum Mechanics II Spring Quarter 2010

Class Hours: MWF 12:40 PM to 1:30 PM

Class Location: 1420 BPS

Textbook: Quantum Mechanics, Volume Two, Claude Cohen-Tannoudji

Webpage: <http://www.pa.msu.edu/~mmoore/852.html>

Instructor: Prof. Michael Moore

Office: 4230 BPS

Office Hours: Friday 1:30 PM to 3:30 PM

E-mail: mmoore@pa.msu.edu

GRADING POLICY:

Grades will be based on HW and two Exams.

The weight will be 40% HW, and 60% Exams.

HW will be assigned on Mondays, due the following Monday at the start of class.

Late HW will not be accepted.

HW and solutions will be distributed via the Web-page.

Tentative Schedule:

- Week 1: 1/11-1/15 Quantum Statistical Mechanics.
- Week 2: 1/20-1/22 Unitary Transformations.
- Week 3: 1/25-1/29 Identical Particles.
- Week 4: 2/1-2/5 Addition of Angular Momentum.
- Week 5: 2/8-2/12 Non-degenerate Time-Independent Perturbation Theory.
- Week 6: 2/15-2/19 Degenerate Time-Independent Perturbation Theory.
- Week 7: 2/22-2/26 Fine-Structure and Hyperfine Splitting in Hydrogen.
- Week 8: 3/1-1/5 Wigner-Eckert Theorem and the Zeeman Effect.
- EXAM I: 1 hour, in-class
- Week 9: 3/15-3/19 Scattering Theory I: Green's Function .
- Week 10: 3/22-3/26 Scattering Theory II: Differential Cross Section.
- Week 11: 3/29-4/2 Scattering Theory III: Partial Wave expansion.
- Week 12: 4/5-4/9 Heisenberg Picture.
- Week 13: 4/12-4/16 Time dependent Perturbation Theory.
- Week 14: 4/19-4/23 Quantum Electrodynamics.
- Week 15: 4/26-4/30 Second Quantization.
- FINAL/SUBJECT EXAM: (TENTATIVE) Wed. 5/5 3:00 PM TO 6:00 PM, 3 hours. Location: TBD.