Physics 5456: Quantum Mechanics II
Fall 2013

Tentative Syllabus

Aug 27-29: Several electron atoms (Schwabl I ch 13)
Sept 3-5: Zeeman, Stark effects, molecules (Schwabl I ch 14-15)
Sept 10-12: Time-dependent phenomena (Schwabl I ch 16)
Sept 17-19: Scattering theory (Schwabl I ch 18)
Sept 24-26: Scattering; density matrix (Schwabl I ch 18, 20)
Oct 1: Test 1
Oct 3: Klein-Gordon equation (Schwabl II ch 5)
Oct 8-10: Klein-Gordon, Dirac equations (Schwabl II ch 5-6)
Oct 15-17: Klein-Gordon, Dirac in hydrogen atom (Schwabl II ch 8)
Oct 22-24: Foldy-Wouthuysen, Lamb shift, Zitterbewegung (Schwabl II ch 9-10)
Oct 29: Test 2
Oct 31 - Nov 5: Second quantization (Schwabl II ch 1)
Nov 7-12: Second quantization of fermions (Schwabl II ch 2)
Nov 14-21: Second quantization of bosons, correlation functions (Schwabl II ch 3)
Nov 26-28: Thanksgiving
Dec 3-10: Correlation functions, scattering, response theory (Schwabl II ch 4)

All dates are approximate; time spent on any topic will be adjusted to the backgrounds of the enrolled students.