

# 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.