Syllabus for Quantum Physics I: Foundations
PHY373, Unique #59250
Fall 2013

Disclaimer: This calendar will be updated at the semester goes on.

Class	Date	Topic	Homework Assigned	Reading Chapter
1	8/28	Introduction. Double Slit Experiment		Notes
2	8/30	Double Slit Experiment		Notes
	9/2	Labor Day		
3	9/4	Wave Function. Probability Interpretation.	1	1
4	9/6	Postulates of QM. Computations in CM vs. QM		Notes
5	9/9	Time Independent Schrödinger Equation. Stationary States		2
6	9/11	Infinite Square Well	2	2
7	9/13	Infinite Square Well		2
8	9/16	Harmonic Oscillator		2
9	9/18	Harmonic Oscillator	3	2
10	9/20	Free Particle: wave packet evolution		2
11	9/23	Free Particle: wave packet evolution		2
12	9/25	Generic Potential: Qualitative Analysis		Notes
13	9/27	The delta-function potential and barrier		2
14	9/30	Observables. Hermitian Operators		3
15	10/2	Review	4	
16	10/4	Quiz 1		
17	10/7	Formalism of QM: Hilbert Space		3
18	10/9	Eigenstates of a Hermitian Operator	5	3
19	10/11	Derivation of Uncertainty Relation		3
20	10/14	Energy-time vs. Space-momentum		3 + Notes
21	10/16	Dirac Notation	6	3
22	10/18	Dirac Notation		3
23	10/21	Periodic Potentials		5
24	10/23	Schrödinger Equation in 3d		4
25	10/25	Schrödinger Equation in 3d		4
26	10/28	Review		4
27	10/30	Quiz 2	7	
28	11/1	Radial Equation		
29	11/4	Hydrogen Atom		4

Class	Date	Topic	Homework Assigned	Reading Chapter
30	11/6	Hydrogen Atom	8	4
31	11/8	Angular Momentum		4
32	11/11	Angular Momentum. Spin		4
33	11/13	Spin	9	4
34	11/15	Addition Angular Momentum		4
35	11/18	Two Particle Systems		5
36	11/20	Identical Particles. Pauli Exclusion Principle		5
37	11/22	Entangled States		Notes
38	11/25	Entangled States		Notes
39	11/27	Density Matrix		Notes
	11/29	Thanksgiving		
40	12/2	Review		
41	12/4	Quiz 3		
42	12/6	Bell's Inequalities. The No-Clone Theorem		12

Final Exam: Monday, December 16, 9:00-12:00 noon