PHYSICS 355

FALL 2005

Instructor: Nilanga Liyanage, Room 053, Physics Building
Office hours: Wednesday and Friday: 1:00-2:00 p.m., or by appointment

Lecture: 11:00 - 11:50 a.m., MWF. Physics Building, Room 205.

TEXT: **Introduction to Quantum Mechanics**
by David J. Griffiths, Second Edition

Important Information and Rules

Your final grades will be determined by:

30% Mid-term exam

25% Homework problems

45% Final exam

Homework problems will be assigned weekly and are due in class on Friday.

To protect the grader from unnecessary work **NO** late problem sets will be accepted. With a valid reason given before the due date, the remaining sets will be averaged without it. Without a valid reason, the grade given will be a zero.

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FALL 2004

Lecture	Month	Day	Chapter	Topics
1	Aug.	24		Introduction
2		26		Old quantum theory and the Bohr Atom
3		29	1.1- 1.2	The Schrodinger Equation, Interpretation
4		31	1.3-1.4	Probability
5	Sep.	2	1.5	Momentum, operators
6		5	1.6	The Uncertainty Principle
7		7	2.1	Stationary States
8		9	2.1	Stationary States
9		12	2.2	The Infinite Square Well
10		14	2.2	The Infinite Square Well
11		16	2.3	The Harmonic Oscillator
12		19	2.3	The Harmonic Oscillator
13		21	2.4	The Free Particle
14		23	2.4	The Free Particle
15		26	2.4	Fourier transforms
16		28	2.5	The Delta-Function Potential
17		30		Review
–	Oct.	3	–	Reading Day
18		5	1-2.5	Mid-term EXAM
19		7	2.6	The Finite Square Well and Scattering
20		10	2.6	The Finite Square Well and Scattering

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Lecture	Month	Day	Chapter	Topics
21		12	3.1	Linear Algebra and Qunatum mechanics
22	Oct.	14	3.3	Function Spaces
23		17	3.4	Generalized Statistical Interpretation
24		19	3.6	Dirac notation
25		21	3.5	The Uncertainty Principle
26		24	4.1	S.E. in Three Dimensions
27		26	4.1	Separation of S.E. in Spherical Coordinates
28		28	4.1	Solution of the Angular part
29		31	4.1	Spherical Harmonics and Angular Momentum
30	Nov.	2	4.1	Infinite Spherical Well
31		4	4.1	Harmonic Oscillator and degeneracy
32		7	4.2	Hydrogen Atom
33		9	4.2	Hydrogen Atom
34		11	4.2	Hydrogen Atom
35		14	4.3	Ladder operators for angular momentum
36		16	4.3	Ladder operators for angular momentum
37		18	4.4	Spin
–		19-27		Thanksgiving break
38		28	4.4	Spin
39		30	4.4	Spin
40	Dec.	2	4.4	Addition of angular momentum
41		5	—	Review
Final		10		Final Exam, 9:00 - 12:00 AM