PHYSICS 355

FALL 2004

Instructor: Nilanga Liyanage, Room 053, Physics Building
Office hours: Monday and Wednesday: 1:30-2:30 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 and classroom participation

45% Final exam

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

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.

PHYSICS 355

FALL 2004

Lecture	Month	Day	Chapter	Topics
1	Sept.	1		Introduction
2		3		The breakdown of classical mechanics
3		6		and the rise of quantum mechanics
4		8	1.1- 1.2	The Schrodinger Equation, Interpretation
5		10	1.3-1.4	Probability
6		13	1.5	Momentum, operators
7		15	1.6	The Uncertainty Principle
8		17	2.1	Stationary States
9		20	2.1	Stationary States
10		22	2.2	The Infinite Square Well
11		24	2.2	The Infinite Square Well
12		27	2.3	The Harmonic Oscillator
13		29	2.3	The Harmonic Oscillator
14	Oct.	1	2.4	The Free Particle
15		4	2.5	The Delta-Function Potential
16		6	2.6	The Finite Square Well and Scattering
17		8	2.6	Finite Square Well
–		11	–	Reading Day
18		13	1-2	Mid-term EXAM
19		15	App. A	Linear Algebra
20		18	App. A	Linear Algebra
21		20	3.1	Linear Algebra and Qunatum mechanics

PHYSICS 355

FALL 2004

Lecture	Month	Day	Chapter	Topics
22	Oct.	22	3.3	Function Spaces
23		25	3.4	Generalized Statistical Interpretation
24		27	3.6	Dirac notation
25		29	3.5	The Uncertainty Principle
26	Nov.	1	4.1	S.E. in Three Dimensions
27		3	4.2	Separation of S.E. in Spherical Coordinates
28		5	4.1	Solution of the Angular part
29		8	4.1	Spherical Harmonics and Angular Momentum
30		10	4.1	Infinite Spherical Well
31		12	4.1	Harmonic Oscillator and degeneracy
32		15		Hydrogen Atom
33		17	4.2	Hydrogen Atom
34		19	4.2	Hydrogen Atom
35		22	4.3	Ladder operators for angular momentum
–		24-26		Thanksgiving break
36		29	4.3	Ladder operators for angular momentum
37	Dec.	1	4.4	Spin
38		3	4.4	Spin
39		6	4.4	Spin
40		8	4.4	Addition of angular momentum
41		10	5.1	Two particle systems
Final	Dec	18		Final Exam, 9:00 - 12:00 AM