

EASTERN NAZARENE COLLEGE

PY 333 Quantum Mechanics

Fall, 2008

INSTRUCTOR: John U. Free, john.u.free@enc.edu

COURSE GOALS:

This course will introduce you to the fundamental ideas of quantum mechanics. We will develop the mathematical techniques necessary to understand and explore physical systems. We will cover as much of the following material as possible.

COURSE DISCRIPTION:

Introduction to nonrelativistic quantum mechanics: uncertainty relations; Schrödinger equation; Dirac notation; matrix mechanics; one-dimensional problems including particle in box, tunneling, and harmonic oscillator; angular momentum, hydrogen atom, spin, Pauli principle; time-independent perturbation theory; scattering; time-dependent perturbation theory.

TEXTS:

Course Text:

Griffiths, David J., **Introduction to Quantum Mechanics**, Prentice Hall

Supplementary References:

Freshman-Sophomore level

Tipler and Llewellyn, **Modern Physics**, Fifth Edition, Freeman

Serway, Moses, and Moyer, **Modern Physics**, Third Edition, Thomson

Junior-Senior level

Anderson, **Modern Physics and Quantum Mechanics**, Saunders

Goswami, **Quantum Mechanics**, Wm. C. Brown Publisher

COURSE WEB PAGE:

You can find the course web page by going to my personal web page (enc.edu/~john.u.free) and clicking on *PY333 Quantum Mechanics*. You will find everything you need to know on the course web page and should consult it often for updates.

HOMEWORK ASSIGNMENTS:

Homework problems that will reinforce the concepts of Quantum Mechanics will be assigned from each chapter. The problems assigned are considered to be the minimum amount of work done to understand the material. You are encouraged to solve more than the required problems to increase your level of understanding. Homework assignments will *not* be graded but you can find the Solution Manual in the Physics/Engineering lounge.

EXAMS:

There will be two exams during the term. The exams will have two parts: In-Class and Take-Dorm. The In-Class part of the exams will be given during class time, take about 30 or 50 minutes and will cover definitions and concepts. The Take-Dorm part of the exam will be timed, open sources, and three or four problems.

FINAL:

The final exam is a cumulative multiple-choice exam scheduled by the Registrar.

GRADING:

Something		30 %
Exams		50 %
Exam #1	25 %	
Exam #2	25 %	
Final Exam		20 %