

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF PHYSICS

Course #: PHYS 4355
Course Title: Introduction to Quantum Mechanics
Credit Hrs: 3
Term: Fall 2016
CRN: 132271
Course Meetings & Location: Physics Science Building 222A, MW 9-10:20 AM
Prerequisite Courses: PHYS 2420, PHYS 2421, MATH 2326
Course Fee: (if applicable)
Instructor: Dr. Chunqiang Li
Office Location: PSCI 221E
Contact Info: Phone #: 7537
E-mail address: cli@utep.edu
Fax #
Emergency Contact
Office Hrs: Tues. 12-1
Textbook(s), Materials: Required: Introduction to Quantum Mechanics, 2nd Ed., David Griffiths
Suggested: Quantum Theory, David Bohm

Course Objectives (Learning Outcomes): Develop an understanding and attain knowledge of quantum mechanics fundamentals. Gain skills and abilities to apply fundamental laws in quantum mechanics to natural science or engineering situations. Get on to solve problems analytically and numerically.

Course Activities/Assignments: Course activities include reading assignment, lectures, homework, two regular exams, and a final exam.

Assessment of Course Objectives: Outcomes will be measured by homework and exams.

Grading Policy: Grades will be assigned on a standard scale:
>89% A
80% - 89% B
70% - 79% C
60% - 69% D
< 60% F
Grades will be calculated using the following weights:
Two midterm exams 60%; Final exam 40%

Make-up Policy: Attendance at exam is mandatory. Make-up exams can be arranged at the discretion of the instructor. A written excuse will be necessary for rescheduling an exam.

Attendance Policy: Attendance in class is the responsibility of the students. If class is missed, you are responsible for obtaining the notes from another student or from the instructor.

Academic Integrity Policy: Acts of academic dishonesty will not be tolerated in this class. Lapses in academic integrity will be referred to the Dean of Students, as required at <http://academics.utep.edu/Default.aspx?tabid=23785>.

Civility Statement: This course requires positive behaviors: Be on time and be focused on your work. Please do not distract yourself or others with telephones or music.

Disability Statement: If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Center for Accommodations and Support Services (CASS) at 747-5148 or at <cass@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.

Military Statement: If you are a military student with the potential of being called to military service and /or training during the course of the semester, you are encouraged to contact me as soon as it appears that your service will interfere with this course. The instructor will work with you to ensure that your service will not adversely affect your academic progress.

Course Schedule: Tentative List of Topics and Exams

1. Introduction
2. Schrödinger equation
3. Examples in one dimension: Infinite square well potential

Exam 1

4. Harmonic oscillator
5. Mathematical formalism
6. Three dimensions: Hydrogen atom

Exam 2

7. Angular momentum
8. Spin
9. Identical particles (possible)

Final Exam