Instructor: Robert Friedfeld Ph.D. Email: rfriedfeld@sfasu.edu
Department: Physics, Engineering & Astronomy
Office: STEM 207G or Miller Science 126 Phone: 468-2197
Office Hours: MW (10 -11) a.m. MS 126, TR (9 – 11) a.m. STEM 207
or by appointment.

Textbook: Introduction to Quantum Mechanics, 3rd Ed.
Authors: David J. Griffiths & Darrell F. Schroeter

Course Description: DeBroglie wave, Schrödinger formulation, step and barrier potentials, perturbation theory, harmonic oscillator, annihilation and creation operations, commutation relations, representations.

Prerequisite: MTH 333, MTH 337, PHY 333, and PHY 347 or permission of instructor

Course Objectives
✓ To study the physical applications of quantum mechanics.
✓ To examine the behavior of systems through the application of physical laws and make quantitative judgments of future behavior based upon the boundary conditions which exist.
✓ To develop the facility to solve the wave equation in closed form where possible and, when it is not possible, through the use of perturbation theory as well as other approximation methods.

STUDENT LEARNING OUTCOMES:
By the end of the course, a successful student will be able to:
✓ Demonstrate a working, quantitative understanding of the quantum phenomena and processes.
✓ Apply the concepts of quantum mechanics to quantitatively predict behavior of physical systems

Students are expected to spend at least three hours studying for every hour of class.

COURSE REQUIREMENTS:
There will be 3 tests (15% each) and a comprehensive final examination (30%). The remaining 25% will be based upon the homework assignments which will be collected and graded.

Make-up Exams: No make up exams will be given. If you miss the final exam for a legitimate reason, you must make it up within one semester of the course end date or you may sit for the exam the next time the course is offered.
COURSE CALENDAR - (subject to change at discretion of the instructor)

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<td>The Wave Function</td>
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<td>Time Independent Schrödinger Equation</td>
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<td>Test #3 (5,6)</td>
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See Final Exam Schedule

(Comprehensive Final Exam)
Dec. 09, 2019 (8:00 – 10:30) a.m.

Meets 3 hrs/wk for 15 weeks, and also meets for a 2-hour final examination. This is a problem oriented class with homework problems. The lecture has 3 hours of contact time each week and the work outside of classes each week averages much more than 6 hours in working homework problems, reading the book to understand the theories used in lecture and in homework problems and exams, and studying for exams which include major exams and possibly short lecture quizzes.

GRADING POLICY:

There will be 3 tests (15% each) and a comprehensive final examination (30%). The remaining 25% will be based upon the homework assignments which will be collected and graded. Final letter grades will be assigned according to the following scale:

| (90-100) = A | (80-89.9) = B | (70-79.9) = C | (60-69.9) = D | (0-59.9) = F |

IMPORTANT DATES:

Aug. 26     Classes begin
Oct. 23     Last day to drop courses
Nov. 23 – Dec. 01 Beginning of Thanksgiving Holiday (8:00 am)
Dec. 02 (Monday) Classes resume
Dec. 09, 2019 (Monday) Final Exam (8:00 – 10:30)
CELL PHONES & OTHER ELECTRONIC DEVICES:

Cell phones and other electronic devices are to be turned off upon entering the classroom and stowed in a zipped up book bag or brief case. An unsecured cell phone during class or during an exam is subject to confiscation and in the case of an exam, will result in an automatic zero for the exam. Any programmable calculator used on an exam must have its memory wiped before the exam.

WITHHELD GRADES (A-54)

At the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future semesters, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

ACADEMIC INTEGRITY (A-9.1)

Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism as well as the appeal process. (Much of this information will be provided through internet links.)

DEFINITION OF ACADEMIC DISHONESTY

Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to: (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) falsification or invention of any information, including citations, on an assignment; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism include, but are not limited to: (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from the Internet or another source; and (3) incorporating the words or ideas of an author into one’s paper or presentation without giving the author due credit.

Please read the complete policy and the appeals process at http://www.sfasu.edu/policies/academic_integrity.asp and http://www.sfasu.edu/policies/academic_appeals_students.asp
STUDENTS WITH DISABILITIES
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS) in the Human Services Building (Room 325, 468-3004 or 468-1004) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodations and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

STUDENT COUNSELING CENTER
Rusk Building 3rd Floor
(936) 468 -2401
Email: counseling@sfasu.edu
The Student Counseling Center is available free of charge to students and is staffed with professional therapists to meet a variety of needs. All interactions with the Student Counseling Center are guaranteed confidential. Licensed Counselors are available from 8:00a.m.-5:00p.m. Monday -Friday. The department is closed on certain holidays, Spring Break and Winter Break when the university is closed. If you are in need of assistance after hours or on the weekend please call: University Police: (936)468-2608 or MHMR Crisis Line: (800)392 -8343. If the situation is life threatening please dial 911.

ATTENDANCE POLICY:
Attendance may be taken on certain dates during the semester. This may be done without prior warning and will be recorded. Attendance may be used to help bring up the final average at the end of the term. “Regardless of attendance, every student is responsible for course content and assignments.” University Policy A-10