



PHYS 4353 – QUANTUM MECHANICS
Texas Physics Consortium

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Textbook: Introduction to Quantum Mechanics, David J. Griffiths, 2nd Edition

Lecture Timings: MWF, 11:00am – 11:50am

Grading Scheme: Assignments (3 assignments) – 10% each
Exams (2 exams) – 20% each
Final – 30%

Exam Dates & Timings: Exam 1 - TBD
Exam 2 – TBD
Final Exam – TBD

Lecture, Lab and Course Information:

- Although attendance is not a part of the grading scheme but participation in class is, so classes should be attended regularly if the student wants to get a good grade. There may be short surprise quizzes during the lectures (not more than 5 in a semester) to test the learning of a student and the grades of these quizzes may be a part of the participation grade. The participation points cannot be made up(not even by excused absences)
- Please try to come to class on time. Students may lose participation points for coming late to class.
- In case of an absence from class, a student may make up the Exam grade if the student has an excused absence. An excused absence should always accompany a document or note from an authorized individual or group. Some excused absences include University sponsored events (showing a document or note from authorized personnel), illness (showing a doctor's note), demise of a family member. It is always better to inform the instructor beforehand in case of a legitimate and planned absence.

- Students are expected to read the chapters to be covered on a particular day prior to coming to class.

Plagiarism: Cheating and plagiarism will not be tolerated. The students are encouraged and expected to collaborate in the course but each student should turn in their individual work. In case the student has used various sources, it is expected that the student mention it as a reference in the submitted work.

Topics:

- ❖ The Wave Function
 - Schrodinger Equation
 - Statistical and Probabilistic Interpretation
 - Normalization
 - Momentum
 - Uncertainty Principle
- ❖ Time-Independent Schrodinger Equation
 - Stationary States
 - Infinite Square Well
 - Harmonic Oscillator
 - Free Particle
 - Finite Square Well
- ❖ Formalism
 - Hilbert Space
 - Observables
 - Eigenfunctions of a Hermitian Operator
 - Uncertainty Principle
 - Dirac Notation
- ❖ Quantum Mechanics in Three Dimension
 - Schrodinger Equation in Spherical Coordinates
 - Hydrogen Atom
 - Angular Momentum
 - Spin
- ❖ Identical Particles
 - Two-Particle Systems
 - Atoms
 - Solids
- ❖ If time permits, we will do a brief introduction to perturbation theory

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil protections for persons with disabilities. Among other things, this legislation requires all students with disabilities be guaranteed a learning environment, which provides for reasonable accommodation of their disabilities. In accordance with state and federal law, MSU provides academic accommodations to students with documented disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Support Services (DSS) in Room 168 of the Clark Student Center (phone 940-397-4140). The instructor is under no obligation to offer accommodations for students with disabilities who are not registered with DSS.

Campus Carry :

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at <http://mwsu.edu/campus-carry/rules-policies>.

PLEASE KEEP YOUR CELL PHONE IN SILENT MODE WHILE IN CLASS. CELL PHONES ARE NOT ALLOWED DURING EXAMS AND FINAL EXAM. IF YOU MUST ANSWER A CALL, PLEASE LEAVE THE ROOM.