PHY 407 Quantum Mechanics I

You should know the following before you enroll in the course:

Mathematics

linear algebra (eg., eigenvalue problems),differential equations (e.g., solution by series method) and the calculus of several variables (partial derivatives, multidimensional integration).

Physics

Classical Mechanics (e.g., Hamiltonian, Kepler problem) some knowledge of 'modern physics' (e.g., de Boglie waves).

Grades

There will be a midterm and a final as well as weekly homeworks. The grade will be based on 25% for midterm, 35% for final and 40% for homeworks.

Syllabus

- Review of Linear Algebra
- Review of Classical Mechanics
- The Schrodinger Equation
- The Free Particle
- The Harmonic Oscillator
- Canonical Commutator Relations
- Creation-Annihilation Operators
- The Hydrogen Atom
- Angular Momentum
- Spin
- The Hydrogen Molecular ion.