Huber

SYLLABUS

PHYSICS 531 - INTRODUCTION TO QUANTUM MECHANICS

1997-98 SEM II

Text: D. J. Griffiths, *Introduction to Quantum Mechanics*

Note: the listing of topics follows the table of contents of the text

I. Wave function
   1. Schrödinger equation
   2. Statistical interpretation
   3. Probability
   4. Normalization
   5. Momentum

II. Time-independent Schrödinger equation
   1. Stationary states
   2. Infinite square well
   3. Harmonic oscillator
   4. Free particle
   5. Finite square well
   6. Scattering matrix

III. Quantum mechanics in three dimensions
   1. Schrödinger equation in spherical coordinates
   2. Hydrogen atom
   3. Angular momentum
   4. Spin

IV. Identical particles
   1. Two-particle systems

V. Time-independent perturbation theory
   1. Non-degenerate perturbation theory
   2. Degenerate perturbation theory

VI. Scattering
   1. Classical scattering theory
   2. Partial wave analysis

VII. Formalism
   1. Uncertainty principle