Physics 566 Quantum Electronics II
Atomic and Molecular Dynamics

Instructor: Tom Weinacht
tweinacht@sunysb.edu
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Topics

1. Wave Packets – Dynamical Quantum States
2. Hydrogen Atom
3. Atomic Structure, Fine and Hyperfine
4. Stark Effect – AC/DC
5. Atom Field Interactions, Dipole Approximation
6. Dressed States
7. Adiabatic Passage
8. Molecular Bonding, Born Oppenheimer Approximation
9. Molecular Dynamics - Clocking Chemical Reactions
10. Time Domain Spectroscopy

Many of the homework assignments will involve writing programs
to numerically solve the time dependent Schrödinger equation.