

BIBLIOGRAPHY:

- Main text: Ira Levine, Quantum Chemistry, 5th ed., Prentice Hall 2000. Also previous editions.
- Morrison, Estle and Lane, Quantum States of Atoms, Molecules and Solids. In particular, the first part covering atoms.
- Pilar, Elementary Quantum Chemistry.
- Nimrod Moiseyev, Quantum Mechanics from the point of view of Chemistry (in Hebrew).

Also other books in library. Dewey code 541.383.

SYLLABUS:

- Mathematical tools: functions, operators, eigenfunctions and eigenvalues.
- Postulates of quantum mechanics.
- Approximation methods: perturbation theory, variational method.
- Atomic structure – generalized orbital momentum, atomic energy levels.
- Molecular structure – symmetry groups, molecular orbitals, valence bond, density functional theory. Applications.
- (Time permitting) Special relativity.