

7. **Group Theory and Quantum Mechanics. Direct Product. Energy Integrals. Electric Dipole Transition Moment Integrals. Symmetry Adapted Linear Combinations.**
8. **Review of Rotational, Vibrational, and Vibrational-Rotational Spectra of Diatomic Molecules. Selection Rules.**
9. **Polyatomic Spectra. Rotational Spectra. Moments of Inertia. Selection Rules.**
10. **Polyatomic Vibrations. Normal Modes. Symmetry of Normal Modes. Interaction with Radiation. Selection Rules. Infrared and Raman Spectra. Force Constants, Overtones and Combinations.**
11. **Electronic Spectroscopy. Franck-Condon Principle. Selection Rules. Pure Electronic Transitions. Vibronic Transitions. Fate of Electronic Excitation Energy. Fluorescence. Phosphorescence.**

Class Schedule:

Lectures:	Monday	Wednesday	Friday	09:30 – 10:20	MACN 118
Laboratories:Section 1	Tuesday			14:30 – 17:20	SCIE 3106
Section 2	Wednesday			14:30 – 17:20	SCIE 3106
Section 3	Thursday			14:30 – 17:20	SCIE 3106

Evaluation:

Laboratory Component	25
Term Test (Wednesday Feb. 25, during lecture time)	25
Final Exam (Wednesday Apr. 08, 08:30 – 10:30)	50
(As Scheduled by the Registrar.)	-----
TOTAL	100