Course Objectives:
• The student will understand structure determination using spectral analysis
• The physical principles and their application in analytical methods will be taught to the students
• The student will understand the differences between absorption and emission spectroscopic techniques and their applications

Outcome:
• The student will become an expert in analyzing spectral data and structure elucidation

Unit I

Unit II
Thermal methods, photoelectron spectroscopy and Mössbauer spectroscopy: Principles and instrumentation of thermo-gravimetric analysis (TGA) and differential thermal analysis (DTA) – complementary nature of TGA and DTA – differential scanning calorimeter (DSC) – isothermal titration calorimetry (ITC) – applications of thermal methods in the study of minerals, polymers, and biological molecules

Unit III

Unit IV
Unit V


Text Books:
2. Gupta Kumar & Sharma, Elements of Spectroscopy, Pragati Prakasan, Meerut, 2001
4. V. Gopalan, P.S. Subramanian, K. Rangarajan, Elements of Analytical Chemistry, S. Chand and Sons, New Delhi, 2003

Reference Books:
2. Y.R. Sharma, Elements of Organic Spectroscopy, S. Chand & Company Ltd., New Delhi, 2004