

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
CHEM-432	Analytical Chemistry (Sp. Theory-II)	4	VIII
Year	Discipline		
4	Chemistry		

SYLLABUS OUTLINE:

Laser Spectroscopy:

Principle of laser operation; Stimulated emission Population inversion, Single level and multi-level laser systems, Properties of laser light and its general and analytical applications; ruby laser, nitrogen laser, dye laser, Use of laser radiation in absorption and fluorescence spectroscopic methods.

Nuclear Magnetic Resonance Spectroscopy:

Basic principles; properties of nuclei, Chemical shifts; Spin-Spin coupling; Pulsed Fourier Transform NMR Spectrometry; Identification of structural features; Use of NMR imaging in medicine; Analytical applications of NMR spectroscopy.

Mass Spectrometry:

Principle of mass spectrometry; Ion system, ionization, acceleration, Drift Chamber, Detection systems; Advancements in equipment in equipment; Analytical uses of mass spectrometry, Quadrupole mass spectrometry; Interpretation of mass spectra. Correlation of mass spectra with Molecular structure.

RECOMMENDED BOOKS:

1. New Instrumental Methods in Electro Chemistry by Faul-Delabay, Inter Science Publisher, London, N.Y.
2. Instrumental Methods of Analysis by Hobert H. Willart, Lyle L. Merrit, D. Van Nosrant Company Inc. N.Y. London.
3. Principles of Polarography by J. Herosky & J. Kuta, Academic Press N.Y. (1968).
4. Laser spectroscopy by Wolfgang Demtroder, springerlink.
5. Analytical chemistry by Kellner, J.M. Mermet, Wiley-VCH Verlag GmbH & Co. KGaA.
6. A text book of analytical chemistry by Y-Anjaneyulu, K-chamdare khar, ValiManickam, Pharma book syndicate.