SARDAR PATEL UNIVERSITY
MASTER IN PHARMACY (M. PHARM.)
FIRST SEMESTER

MPH-501 : ADVANCED INSTRUMENTATION ANALYTICAL TECHNIQUES

**THEORY:** (4 hours per week)

1. Recent trends in chromatography: HPLC, HPTLC, Principle for selection of HPLC and GC columns. System suitability of HPLC and GC. HP affinity chromatography, HP ion pair chromatography, Electrokinetic chromatography, Chiral recognition, separation of stereo-isomers by HPLC.
2. Theory and instrumentation of UV and IR. Their applications. FTIR, Its advantages over conventional IR. Interpretation of IR spectra.
3. Theory and instrumentation of NMR [ H and C ]. FT-NMR. Interpretation of C\(^{13}\) NMR spectra. Interpretation of PMR spectra of some common drugs. Study of high orders of splitting in PMR spectra.
5. Spectrofluorimetry: Principle, instrumentation and applications.
7. X Ray diffraction method and basic principles of laser and its applications.

**PRACTICALS:** (4 hours per week)

Practical exercises will be based on theory syllabus.

**BOOKS RECOMMENDED:**

1. Instrumental Methods of Analysis: Willard, Merrit and Dean (Latest Edition)
2. Pharmaceutical Analysis Vol. 1 & 2 – Munson
3. Introduction to Instrumental Analysis – Robert D. Braun