

Specialization - Pharmacy

Modern Analytical Techniques

- 1) Theory of UV, IR, Derivative spectroscopy, FT-IR, NIR, ATR and their application to structural elucidation.
- 2) Theory, Instrumentation and Application of Fluorimetry, Flame Photometry.
- 3) Theory, Instrumentation and Application of Atomic Absorption and Atomic Emission Spectroscopy.
- 4) Nuclear Magnetic Resonance Spectroscopy: Fundamental principle of NMR, chemical shift concept, factor affecting chemical shift, characteristics of it, brief outline of instrumentation, spin spin coupling, coupling constant, PMR. CMR.
- 5) Mass Spectroscopy: Basic Principle & brief outline of Instrumentation, Types of ionization, Types of peak, Fragmentation process, Different analyzers and application of MS.
- 6) Basic Principle, applications and recent trends in chromatography.
 - a. HPLC, LC-MS
 - b. GC, GC-MS
 - c. HPTLC
 - d. Ion exchange chromatography
 - e. Ion pair chromatography
 - f. Size exclusion chromatography
 - g. Affinity chromatography
 - h. Electro kinetic chromatography
 - i. Super critical fluid chromatography

Advances in Pharmaceutical Sciences

- Biostatistics: Mean, Median, Mode, Standard Deviation and co-efficient of Variation, Student t-test, one way ANOVA, chi-square test, probability, frequency distribution, regression analysis, bioavailability-cross over study, wilcoxon signed rank test.
- Experimental Design: Introduction to full and fractional factorial designs, central composite design, evolution of full and reduced mathematical models in experimental designs, application of the experimental designs for the subjects mentioned under Pharminformatics, introduction to contour plots.