

Course Content: Advanced Analytical Techniques: Basic Principles and Applications for Quality Assessment of Drugs and Pharmaceuticals for Export

Chromatographic Techniques

- HPTLC: Principles and Applications
- HPLC: Principles and Applications in Analytical Assessment
- Hands-on Training on HPLC
- 2. **Spectroscopic Techniques**
 - NMR Spectroscopy: Basic Principles and Pharmacopeial Analysis
 - Hands-on Training on NMR (600 MHz)
 - Mass Spectroscopy: Advanced Analytical Technique
 - LC-MS Q-TOF: Fundamentals and Applications
 - Hands-on Training on LC-MS/MS, LTQ-XL
 - Hands-on Training on HRMS
 - Fluorescence Techniques for Quality Management
 - Fluorescence Spectroscopy, FACS, ITC, SPR, MST, FTIR, CD, Polarimeter (Hands-on Training)
 - Electrophoresis and Capillary Electrophoresis
 - Spectroscopic Tools for Biopharmaceutical Analysis
- 3. **Advanced Characterization Techniques**
 - Nanomaterials for Drug Delivery
 - XRD: Applications in Pharmaceuticals
 - Hands-on Training on XRD
 - Hands-on Training on DSC/TGA
 - Solid-state Characterization of Pharmaceuticals
- 4. **Stability and Quality Management**
 - Stability Testing (Part I & II)
 - Laboratory Quality Management System (ISO/IEC 17025:2017 Overview)
- 5. **Regulatory and Industrial Exposure**
 - Analytical Method Validation
 - Impurity Profiling
 - Role of Analytical Instruments in Food and Pharma Contaminants
 - Flagship Programme of India
 - Visit to Punjab Biotechnology Incubator, Mohali
 - Industrial Visit to Glenmark Labs Ltd., Baddi
 - Visit to NIPER Departments and Heritage Center