



CSIR-CDRI Skill Development Program (under CSIR Integrated Skill Initiative)



Advanced Spectroscopic (NMR, HPLC LC-MS, UV/IR) Techniques

Under CSIR-Integrated Skill Initiative, CSIR-Central Drug Research Institute is offering a certificate course on SKILL DEVELOPMENT PROGRAM in advanced spectroscopic techniques. It is intended to generate employment ready human resources with knowledge of operation, maintenance and interpretation of spectral data using state-of-art spectrometers to fulfil the need. During this training exposure will be given to the state-of-art instruments i.e. Mass, NMR, HPLC, FTIR, UV etc. This training program will provide knowledge about theoretical, practical training on basic and advanced experimental methods in these techniques. Also providing understanding and hands on experience on elucidating the structural information of various molecules in the field of drug discovery process.

Duration	: 12 weeks
No of Seats	: 16
Essential Qualification	: B.Sc./ B.Tech./ B. Pharm./ M.Sc./ M.Tech./ M. Pharm./ Ph.D.
Nodal Officer	: Dr. Brijesh Kumar

Training Curriculum

- Basic Principles of Mass Spectrometry, instrumentation, types of ion formation, fragmentation process and pattern, various ionization techniques i.e., EI & CI, API-MS, FAB-MS, MALDI-MS, interpretation of Mass spectral data and MS applications in Drug Discovery. Applications of LC-MS methods.
- Basics of NMR Spectroscopy, nuts & bolts of NMR instrumentation, chemical shifts and spin-spin coupling constants, FT-NMR, homo and hetero nuclear two-dimensional NMR. Hands on training on state-of-art NMR spectrometers and interpretation of data, its variety of applications in Drug Discovery.
- Chromatographic methods and theory of chromatography. Principles, techniques, instrumentation and applications HPLC.
- Theory and applications of UV-VIS spectroscopy, interpretation of spectra, multi component assay, difference and derivative spectra.
- Theory, instrumentation and applications of FT-IR, ATR and NIR.