



Title of the Course: Analytical Tools for Chemical Analysis

Department: Chemistry

Course Objective: To enable students to acquire detail knowledge about principles and working of instruments used in various chemical analysis, for structure elucidation and determination of electrical and magnetic properties. The course imparts knowledge about the various techniques of separation as used for organic molecules, naturally occurring compounds and several pharmaceutical products. This helps the students during the project work to be taken at T.Y.BSc, and also motivates for further Research studies.

Course Content/Curriculum :

- 1, Induction session / Research areas of different CSIR laboratories in India. 2hrs
2. Theory of instrumentation working and demonstration of XRF. 3hrs
3. Theory of instrumentation working and demonstration of XRD. 3hrs
4. Theory of instrumentation working and demonstration of SEM. 3hrs
5. Theory of instrumentation working and demonstration of Coulometry. 3hrs
6. Theory of instrumentation working and demonstration of AAS. 3hrs
7. Theory of instrumentation working and demonstration of FTIR. 3hrs
8. Theory of instrumentation working and determination of Magnetic Susceptibility 3 hrs
9. Theory of instrumentation working and demonstration of GC and HPLC 3 hrs
10. Theory of instrumentation working and demonstration of LCMS 2hrs
11. Research areas of NIO. 2hrs

Course outcome: Students after completing this course gain adequate knowledge to operate instruments like XRD,XRFS,SEM, AC Susceptibility, GC, HPLC,FTIR for determination of structure, electrical and magnetic properties.