

SYLLABUS

ADD ON COURSE on

Soil/water analysis, Natural Product Extraction and Molecular Structure Drawing Software

Course structure: Duration of course: 40 hrs (spreading over 3 months)

Theory: 1hr, Practical: 2 hrs duration

Course	No. of days	Total hours
Theory	20	20
Practical	10	20
Total	30	40

Syllabus

Theory:

20 lectures

Analysis of soil: Composition of soil, concept of p^H and p^H measurement, Complexometric titrations, Chelation, Chelating agents, Use of indicators

Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods

Basic idea about Paper Chromatography, Thin Layer Chromatography, Column Chromatography and their practical application

Distillation, steam distillation, fractional distillation, distillation under reduced pressure

Solvent extraction

Brief idea about normality, molarity, molality and decinormal solution and their practical application

Basic idea about Natural product extraction techniques

Practical:

10 hands on

Analysis of soil/water

- Determination of P^H of soil sample
- Determination of p^H and conductance of water sample

Solvent Extraction

- Extraction of caffeine, β -carotene and lycopene from natural products
- Identification of extracted product by TLC

Introduction to molecular structure drawing software

Basic idea and application of Chemdraw/ ISIS draw/diamond/mercury software

Course outcome:

The students with this add on course will be able to

- Develop laboratory skill in soil and water analysis
- Learn how to handle various equipment in Natural products extraction techniques
- Learn to use software for drawing organic and inorganic molecules

Overall outcome:

The students passing B.Sc. (Hons.) with this add on course will be able to find job opportunities in industries and R&D laboratories. This add on course will also be helpful in pursuing PG courses.