Yashavantrao Chavan Centre for Invention and Incubation (YC-CIII)

Instrumental Technique in chemistry

1. Sector
2. Subject: Instrumental Technique in chemistry
3. Year of implementation: 2022

Course Structure

Duration	Theory Hours	Practical Hours	Total Hours	Credits	No. of students in batch
3 Month	20	30	50	02	30

Syllabus

Course Objectives:

1.To give the knowledge to the students about the all instruments.

2.To make the students knowledgeable about handling the instrument.

3.To understand those instrument

Theory Syllabus (20 Hrs)

Unit I: – UV Visible Spectroscopy and Infrared Spectroscopy

Introduction, Principle, Instrumentation, practical demonstration on instrument, calibration and method development, spectroscopy instrumentation as well as data handling, analysis and reporting.

Unit – III – Atomic absorption Spectroscopy, Scanning Electron Microscope (SEM) and HPLC

Introduction, Principle, Instrumentation, practical demonstration on instrument, calibration and method development, spectroscopy instrumentation as well as data handling, analysis and reporting.

Reference Books:

1) Alka L.gupta ,analytical chemistry
2) Skoog,D.A.Holler F.J. and Nieman, T.A.Principle of instrumental analysis , cengage learning india Ed.

3) Willard, H.H., Merritt,L.L., Dean, J.&Settoe,F.A. Instrumental Methods of analysis. 7th Ed. Wadsworth Pblishing Co. Ltd.Belmont, California, USA,1988

Practical Syllabus (30 Hrs)

List of Experiments: ---------- 24 hr

1) Determination of heavy metals concentration in soil by Atomic Absorption Spectroscopy

2) a) Identification of functional group.

b) Identification of compound using the fingerprint region.

3) Determination of Na content in table salt by Atomic Absorption spectroscopy

4) Determination of Mg concentration from tap water by Atomic Absorption Spectroscopy.

5) Characterization of nanoparticles.

Project/ Field Visits/ Industrial Visit----------06 hr

Course Outcomes:

1)The student should know identifying, quantifying and purifying the individual component of the mixture

2)The student should know size and morphology of the Nanoparticle in SEM.

3) Able to handle any instrument used in industry.

BOS Sub Committee:

Sr.No	Name Of Member	Designation	Address
1.	Dr.G.D.Kokate	Chairman	Asst. Prof. YCIS Satara
2.	Ms.V.V.Walekar	Member	Asst. Prof. YCIS Satara
3.	Dr.S.P.Pawar	Academic Expert	Asst. Prof. RCSC, Kolhapur
4.	Mr.Ajit Ekal	Industrial Expert	Manager, Insta Vision Laboratories and service, Satara