

# **FACULTY OF PHYSICAL SCIENCES**

## **INSTRUMENTATIONS AND ANALYTICS**

### **Unit- 1**

#### **Spectrophotometry**

Principles and application of Spectrophotometry (UV-Visible spectrophotometry), Titrimetry, Gravimetry, Colourimetry.

### **Unit- 2**

#### **Microscopy**

NMR, ESR, Microscopy-phase, light and fluorescence microscopes, Scanning and Transmission electron microscopes.

### **Unit- 3**

#### **Chromatography**

Chromatographic techniques (Paper chromatography, thin layer chromatography, ion exchange chromatography, Column chromatography), Atomic absorption spectrophotometry, Hydrodynamics methods, Plasma emission spectroscopy.

### **Unit- 4**

#### **Other methods use in analytical techniques**

Electrophoresis, solid and liquid scintillation, X-ray fluorescence, X-ray diffraction. Flame photometry, Gas-liquid chromatography, High pressure liquid chromatography – autoradiography, Ultracentrifugation.

#### **Books Recommended:**

1. Undergraduates Instrumental Analysis- James W. Robinson
2. Modern methods of Chemical analysis- Robert, Shields, Cairns, William.
3. Fundamentals of Analytical Chemistry 8th Edition- Skoog, West, Holler and Crouch, Cengage Learning India.