



**The Islamia University of Bahawalpur**  
**Department of Chemistry**

**Course**

**Course Code 22313**

**MSc (3<sup>rd</sup> Semester)**

**Analytical Chemistry**

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## **Course Outline**

### **SPECTROSCOPY OF ATOMS**

It include following topics

- 1) Atomic Fluorescence Spectroscopy
- 2) Atomic Absorption Spectroscopy
- 3) Flame Photometry
- 4) LASER Spectroscopy

## **1)Atomic Fluorescence Spectroscopy**

- a) Introduction of Fluorescence
- b) Theory and types of fluorescence
- c) Quantitative estimation of fluorescence
- d) Factor affecting fluorescence
- e) Instrumentation
- f) Applications, advantages and limitations

## **2)Atomic Absorption Spectroscopy**

- a) Introduction and Principle
- b) Instrumentation
- c) Applications, advantages and limitations
- d) Detection limit and sensitivity

## **3)Flame Photometry**

- a) Introduction
- b) Instrumentation
- c) Factors influencing the intensity of emitted radiation in FE
- f) Applications, advantages and limitations

## **4)LASER**

- a) Introduction
- b) Types and instrumentation
- c) Operational modes
- d) Applications

### **Books Recommended:**

- 1) Modern Spectroscopy by J. Michael Hollas.
- 2) Atomic Absorption Spectroscopy by Gary. D. Christian and Fredric J. Feldman.
- 3) Handbook of LASER Induced Breakdown Spectroscopy by David A. Cremers and Leon J. Radziemski.
- 4) Principle of Fluorescence Spectroscopy by Joseph R. Lakowicz.
- 5) Instrumental Analysis by Skoog-Holler-Crouch.