

## 212004 – PHYSICAL METHODS OF ANALYSIS

CREDITS: 04 (four) – 60 hours/class

### CONTENT:

Infrared Spectroscopy. Spectroscopy in Ultraviolet. Nuclear Magnetic Resonance. Mass spectrometry.

### SYLLABUS:

1. Ultraviolet, CD and ORD spectroscopy.
2. Infrared and Raman spectroscopy.
3. Mass spectrometry.
4. Nuclear Magnetic Resonance of Hydrogen.
5. Nuclear Magnetic Resonance of Carbon and other nuclei.
6. Modern Techniques in Nuclear Magnetic Resonance.

### BIBLIOGRAPHY:

1. CLARIDGE, Timothy D. W. High-Resolution NMR Techniques in Organic Chemistry. Pergamon, 1999.
2. WILLIAMS, Dudley H.; FLEMING, Ian. Spectroscopic Methods in Organic Chemistry. 2.ed. McGraw-Hill, 1973.
3. WEBSTER, Francis X.; KIEMLE, David J.; SILVERSTEIN, Robert M. Identificação espectrométrica de compostos orgânicos. 7.ed. LTC, 2006.
4. BARROW, Gordon M. Introduction to Molecular Spectroscopy. McGraw-Hill, USA, 1962.