

Program: Chemistry (15025012071P6)

Course: TECHNIQUES FOR CHARACTERIZATION OF ORGANIC COMPOUNDS

Code: PPGQU0051

Workload: 60 hours

Credits: 04

Syllabus:

General principles of spectroscopy: interaction of radiant energy with matter, the electromagnetic spectrum in the ultraviolet (UV), and radio frequency (RF) ranges; Mass spectrometry (MS); Spectrum analysis and use of information for structure proposition of simple compounds; Application of spectroscopic techniques in the infrared, ultraviolet, hydrogen-1 and carbon-13 nuclear magnetic resonance regions, exploring one – and two-dimensional experiments (DEPT, COSY, HMQC, HMBC, NOE, NOESY), and mass spectrometry in academic and industrial laboratories, in chemical and pharmaceutical research.

Bibliography:

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SILVERSTEIN, R. M.; WEBSTER, F. X.; and KIEMLE, D. J. Spectrometric Identification of Organic Compounds, 7th ed. LTC – Livros Técnicos e Científicos Editores S.A, 2006.

KEMP, W. Organic Spectroscopy, 3rd ed. London: Palgrave Macmillian Publishers Ltd, 1991.

BREITMAIER, E. Structure Elucidation by NMR in Organic Chemistry – A Practical Guide, New York: John Wiley & Sons, 1993.

ANDERSON, R. J.; BENDELL, D. J.; and GROUNDWATER, P. W. Organic Spectroscopy Analysis, Cambridge: Royal Society of Chemistry, 2004.

BREITMAIER, E. Structure Elucidation by NMR in Organic Chemistry. A Practical Guide, 3rd Revised Ed., John Wiley & Sons, Inc., 2002.

AGRAWAL, P. K. Carbon-13 NMR of Flavonoids, Elsevier, 1989.