



PROGRAMS E BIBLIOGRAPHY

Subject	
Code	Name
QA381	Spectroanalytical Chemistry

Vector
OF:S-5 T:002 P:000 L:000 O:000 D:000 HS:002 SL:002 C:002 AV:N EX:S FM:75%

Pre requirements	QA282
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Summary
Introduction to analytical spectroscopy methods. Optics spectroscopy instruments. UV visible molecular absorption spectroscopy. Molecular luminescence spectroscopy. Atomic spectroscopy.

Program
Properties of electromagnetic radiation. Diffraction, transmission, refraction, scattering and polarization of radiation. Interaction of radiation with matter. Photoelectric effect. Radiation emission and absorption. Transmittance and absorbance measurements. Absorption and emission spectra. Beer's Law. Beer's Law limitations. Components of optical instruments. Radiation sources. Wavelength selector. Radiation transducer. Molecular fluorescence. Instruments and applications. Molecular phosphorescence spectroscopy. Chemiluminescence. NIR spectroscopy. Atomic spectra origin. Atoms and ions production. Sample introduction systems. Atomic emission spectrometry. Plasma sources. Atomic absorption spectroscopy. Flame atomization. Electrothermal atomization.

Bibliography
1. Skoog, D.A.; Holler, F.J. and Nieman, T.A., <i>Princípios de Análise Instrumental</i> , 6 <sup>th</sup> Edition, Bookman, Porto Alegre, 2009. 2. Skoog, D.A.; West, D.M.; Holler F.J.; Crouch, S.R., <i>Fundamentos de Química Analítica</i> , Translation from the 9 <sup>th</sup> North American edition, CENGAGE Learning, São Paulo, 2015. 3. Harris, D.C., <i>Análise Química Quantitativa</i> , 8 <sup>th</sup> Edition, LTC, Rio de Janeiro, 2012

Evaluation criteria
For grading policy, see: Regimento Geral de Graduação, Seção I – Normas Gerais, Capítulo V – Da Avaliação do Aluno na Disciplina. Students are required to attend 75 % of the lectures. For further details, see: Regimento Geral de Graduação, capítulo VI, seção X, artigo 72.