UNIVERSIDADE ESTADUAL DE CAMPINAS
INSTITUTO DE QUÍMICA

PROGRAMS AND BIBLIOGRAPHY

Subject	
Code	**Name**
QA852	**Analytical applications of vibrational spectroscopy**

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 requirement	QA584

Summary
Analytical applications of near infrared, mid infrared and Raman spectroscopy. Multivariate data treatment. Processes control.

Program
Introduction. Principles of vibrational spectroscopy. Mid- and near infrared. Instrumentation. Fourier-transform spectrometers. Analytical applications. Qualitative and quantitative applications. Raman spectroscopy. Surface-enhanced Raman spectroscopy. Hyperspectral imaging. Chemometrics for vibrational spectroscopy data treatment. Vibrational spectroscopy for process control.

Bibliography
1. Skoog, D.A.; Holler, F.J. and Nieman, T.A., Princípios de Análise Instrumental, 6th edition, Bookman, Porto Alegre, 2009.
2. Workman Jr., Weyer, L. Practical Guide to Interpretative Near-Infrared Spectroscopy, CRC Press, Boca Raton, 2008.
3. Slazer, R.; Siesler, H.W. (eds.), Infrared and Raman Spectroscopic Imaging, Wiley, Weinheim, 2014.
4. Vandenabeele, P., Practical Raman Spectroscopy: An Introduction, Wiley, Weinheim, 2013.

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.