



PROGRAMS E BIBLIOGRAPHY

Subject	
Code	Name
QA481	Separation methods

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

Summary
Introduction to separation methods. Thin layer Chromatography and column chromatography. Gas chromatography. High performance liquid chromatography. Ultra high performance liquid chromatography. Capillary electrophoresis.

Program
Thin layer chromatography. Column chromatography. Basic principles of chromatography. Chromatographic parameters. Separation mechanisms in chromatography: adsorption, partition, ionic exchange, molecular exclusion and bioaffinity. Gas chromatography: stationary phases; mobile phase and instrumentation. Gas chromatography detectors. High performance and ultra high performance liquid chromatography: stationary phases; mobile phase and instrumentation. Liquid chromatography detectors. Capillary electrophoresis: electroosmotic flow, electrophoretic mobility, separation modes, instrumentation. Mass spectrometry: hyphenation to separation methods. Analytical applications of separation methods.

Bibliography
1. Holler, F.J.; Skoog, D. A. Crouch, S. R., Principles of Instrumental Analysis, 5 th ed., Saunders College Publishing, New York, 1998.
2. Skoog, D.A.; West, D.M.; Holler F.J.; Crouch, S.R., Fundamentos de Química Analítica, Translation from the 9 th North American Edition, CENGAGE Learning, São Paulo, 2015.
3. Collins, C.H.; Braga, G.L.; Bonato, P.S., Fundamentos de Cromatografia, Editora da Unicamp, 2006.
4. Miller, J. M., Chromatography: Concepts and Contrasts, 2 nd ed., Wiley, Hoboken, 2009.
5. Landers, J. (Ed.) Capillary and Microchip Electrophoresis and Associated Microtechniques, 3 rd ed., CRC Press, Boca Raton, 2008.

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.