

Code: QA853								
Name: Especificação Química								
Name in English: Chemical Speciation								
Name in Spanish: Especiación Química								
Subject type: Weekly								
Approval Type: Grade and frequency								
Characteristic: Regular								
Frequency: 75%								
Period Type / Offering period: Semi-annual / Every period								
Requires Final Exam: Yes								
Vectors								
T	L	P	O	PE	OE	SL	WEEKS	CREDITS
2	0	0	0	0	0	2	15	2
Occurrence on curriculum:								
Pre requirement: QA584 ou QA585								
<b>Summary:</b> Speciation and fractionation applied to analytical chemistry.								
<b>Program:</b> Speciation and fractionation: definitions, concepts and applications. Factors influencing chemical speciation in environment: pH, oxi-reduction potential, organic matter, alkalinity, salinity, and bacterial activity. Factors influencing chemical speciation in living organisms: bioavailability, metals function in organisms. Speciation analysis: sampling, storage and sample preparation techniques aiming chemical speciation. Analytical techniques for chemical speciation. Application of stable isotopes in chemical speciation.								
<b>Basic Bibliography</b>								
1) CORNELIS, R. <b>Handbook of Elemental Speciation: Techniques and Methology</b> . Hoboken: Wiley, 2003. E-book.								
2) CORNELIS, R. <b>Handbook of Elemental Speciation, II: Species in the Environment, Food, Medicine and Occupational Health</b> . Hoboken: Wiley, 2005. 768 p.								
3) ARRUDA, M.A.Z. <b>Trends in Sample Preparation</b> . 1. Ed. New York: Nova Science, 2007. 304 p.								
<b>Supplementary Bibliography</b>								
1) HARRIS, D.C. <b>Análise Química Quantitativa</b> . 9. Ed. Rio de Janeiro: LTC, 2017. 774 p.								
2) SKOOG, D.A.; HOLLER, F.J.; NIEMAN, T.A. <b>Princípios de Análise Instrumental</b> . 6. Ed. Porto Alegre: Bookman, 2009. 1055 p.								
3) CHRISTIAN, G.D. <b>Analytical Chemistry</b> . 6. Ed. New York: Wiley, 2004. 828 p.								
4) URE A. M.; DAVIDSON C.M. <b>Chemical Speciation in the Environment</b> . 2. Ed. New York: Wiley-Blackwell, 2007. E-book.								
5) MICHALKE, B. <b>Metallomics: Analytical Techniques and Speciation Methods</b> . 1. Ed. Weinheim: Wiley-VCH, 2016. E-book.								