Code: QA585

Name: Laboratório de Química Analítica Instrumental

Name in English: Instrumental Analytical Chemistry Laboratory

Name in Spanish: Laboratório de Química Analítica Instrumental

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
0	**4**	**0**	**1**	**0**	**0**	**4**	**15**	**5**

Occurrence on curriculum: 05, 50

Pre requirement: QA381 + QA383 + QA481 + QA483

Summary:
Application of spectrochemical, electrochemical, and separation methods of analysis. Sample preparation.

Program:
Practices involving separations techniques among column chromatography, thin-layer chromatography, high performance liquid chromatography, gas chromatography, and capillary electrophoresis. Practices involving spectrochemical techniques among flame absorption and emission spectrometry, spectrophotometry, molecular fluorescence, medium-infrared and near-infrared spectroscopy. Practices involving electrochemical techniques among potentiometry, electrogravimetry, coulometry, and voltammetry. Strategies of sample preparation among organic and inorganic dissolution, solid-phase extraction, solid-phase microextraction, liquid-liquid extraction.

Basic Bibliography

1) SKOOG, D.A.; WEST, D.M.; HOLLER, F.J.; CROUCH, S.R. **Fundamentos de Química Analítica**. tradução da 9. Ed. São Paulo: Cengage Learning, 2015. 950 p.
2) HARRIS, D.C. **Análise Química Quantitativa**. 9. Ed. Rio de Janeiro: LTC, 2017. 774 p.
3) SKOOG, D.A.; HOLLER, F.J.; NIEMAN, T.A. **Princípios de Análise Instrumental**. 6. Ed. Porto Alegre: Bookman, 2009. 1055 p.

Supplementary Bibliography

1) BARD, A.J.; FAULKNER, L.R. **Electrochemical methods: fundamentals and applications**. 2. Ed. New York: Wiley, 2001. 833 p.
2) FIGUEIREDO, E.C.; BORGES, K.B.; QUEIROZ, M.E.C. **Preparo de Amostras para Análise de Compostos Orgânicos**. Rio de Janeiro: LTC-GEN, 2015. 263 p.
3) MILLER, J.C.; MILLER, J.N. **Statistics for Analytical Chemistry**, 3. Ed. New York: Prentice Hall, 1993. 233 p.
4) SAWYER, D.T.; HEINEMAN, W.R.; BEEBE, J.M. **Chemistry Experiments for Instrumental Analysis**. New York: Willey, 1984. 427 p.
5) COLLINS, C.H.; BRAGA, G.L.; BONATO, P.S. **Fundamentos de Cromatografia**. Campinas: Editora da Unicamp, 2006. 453 p.