



**PROGRAMS AND BIBLIOGRAPHY**

| <b>Subject</b> |   |
|----------------|---|
| <b>Code</b>    | <b>Name</b>                                     |
| QA584          | Laboratory of instrumental analytical chemistry |

| <b>Vector</b>   |
|---|
| OF:S-5 T:000 P:002 L:004 O:000 D:000 HS:006 SL:006 C:006 AV:N EX:S FM:75% |

| <b>Pre requirement</b>  |
|-------------------------|
| QA381 QA383 QA481 QA483 |

| <b>Summary</b>   |
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| Application of spectroanalytical, electroanalytical and separation techniques in analytical methods. Sample treatment. |

| <b>Program</b>   |
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| Experiments involving separation techniques, such as: column chromatography, thin layer chromatography, high performance liquid chromatography, gas chromatography and capillary electrophoresis. Experiments of spectroanalytical techniques, such as: flame atomic absorption and emission, spectrophotometry, molecular fluorescence and near and medium infrared spectroscopy. Experiments of electroanalytical techniques, such as: potentiometry, electrogravimetry, coulometry and voltammetry. Application of sample preparation strategies, such as: mineral and vegetal samples dissolution, solid phase extraction and microextraction, and liquid-liquid extraction. |

| <b>Bibliography</b>  |
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| <ol style="list-style-type: none"><li>1. Holler, F.J.; Skoog, D. A. Crouch, S. R., Princípios de Análise Instrumental, 6<sup>th</sup> Edition, Arned/Bookman, Porto Alegre, RS, 2009.</li><li>2. Skoog, D.A.; West, D.M.; Holler F.J.; Crouch, S.R., Fundamentos de Química Analítica, Translation from the 9<sup>th</sup> North american edition, Cengage Learning, São Paulo, 2015.</li><li>3. Harris, D.C., Análise Química Quantitativa, 8<sup>th</sup> Edition, LTC Editor, Rio deJaneiro, RJ, 2012.</li><li>4. Christian, G.D., Analytical Chemistry, 6<sup>th</sup> edition, John Wiley &amp; Sons, New York,2004.</li><li>5. Sawyer, D. T.; Heineman, W. R.; Beebe, J. M., Chemistry Experiments for Instrumental Methods, John Wiley, New York, 1984.</li></ol> |

| <b>Evaluation criteria</b>   |
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| 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. |