

UNIVERSITY OF PUERTO RICO AT ARECIBO
PHYSICS/CHEMISTRY DEPARTMENT
BACHELOR OF TECHNOLOGY IN INDUSTRIAL CHEMICAL PROCESSES

Course N°: QUIM 3026

Title of Course: Analytical Chemistry Laboratory

Credits: 0

Open to: Natural Science and Industrial Chemical Processes Technology students

Contact Hours: 6/weekly

Pre-requisite: none

Textbook: Fundamental of Analytical Chemistry

Co-requisite: QUIM 3025

Author: Skoog, D.A., West, D.M., Holler, F.J., and Crouch, S.R.

Publisher: Brooks/Cole

Publication Year: 2004

Other Supplemental Materials:

- Analytical chemistry for technicians, by Kenkel, John. Boca Raton : Lewis Publishers, 2003.
- Quality and reliability in analytical chemistry, by Aboul-Enein, Hassan Y. Boca Raton: CRC Press, 2001.

Term: First Semester

Course Coordinator: Dr. Fernando L. Herrera

Course Description: Laboratory experiences in quantitative analysis emphasizing the determination of analytes in unknown samples by: gravimetric, volumetric, potentiometric and spectrophotometric techniques. Includes topics in statistical treatment of data.

Course Objectives:

- Use and operate chemistry laboratory equipment and analytical instrumentation.
- Apply their knowledge in experimental methods of analysis.
- Implement laboratory safety rules.
- Evaluate experimental results statistically.
- Develop technical reports writing skills.

Relation of Course to Program Objectives:

1	2	3	4
x			

Relation of Course to Program Outcomes:

1	2	3	4	5	6	7	8	9	10	11
x	x	x								

Evaluation/Grade Reporting: 12 laboratory reports (54%), laboratory notebook, assignments and quizzes (11%), two exams (36%)

Topics	Teaching/Learning Strategies Time Distribution (hours)
Statistical analysis	Lectures and experiment (9)
Gravimetric analysis	Lectures and experiment (15)
Volumetric Analysis	Lectures and experiment (36)
Potentiometric analysis	Lectures and experiment (15)
Spectrophotometric analysis	Lectures and experiment (15)
Chromatographic analysis	Lectures and experiment (6)
Total	90
