

General Chemistry Laboratory

1. **Course number and name:** 020TCGNI2 General Chemistry Laboratory
2. **Credits and contact hours:** 2 ECTS credits, 1x1:15 contact hours
3. **Name(s) of instructor(s) or course coordinator(s):** Marina Daccache, Samar Kaddah, Tala Kanson, Marie-José Zacca
4. **Instructional materials:** Experimental Chemistry Laboratory Companion

5. Specific course information

a. Catalog description:

This course focuses on the comprehension of hazards and risks, as well as the identification of relevant safety guidelines. It aims to enhance students' knowledge regarding laboratory procedures, techniques, and safety protocols. Additionally, the course aims to develop students' skills in qualitative chemical analysis and titration of various mineral solutions, including acids, alkaline solutions, and precipitation reactions. Furthermore, students will learn to verify theoretical information through the determination of concentrations using electrochemical analysis methods such as spectrophotometric analysis. Emphasis will be placed on familiarizing students with the equipment used in each laboratory session and establishing a strong foundation for data interpretation.

b. Prerequisites: 020CHGNI1 General Chemistry

c. Required/Selected Elective/Open Elective: Required

6. Educational objectives for the course

a. Specific outcomes of instruction:

- Gain a solid understanding of fundamental concepts and principles learned in chemistry courses to apply them effectively in laboratory experiments.
- Develop skills in conducting literature searches and selecting appropriate references that align with the specific needs of the experiment.
- Familiarize with commonly used laboratory equipment and gain a thorough understanding of their working principles.
- Acquire the ability to think critically and strategically when designing experiments and properly analyze the obtained results.

b. PIs addressed by the course:

| | | |
|-----------------|-----|-----|
| PI | 6.1 | 6.2 |
| Covered | x | x |
| Assessed | | |

7. Brief list of topics to be covered

- Introduction to Chemistry Laboratory: Laboratory Safety, Pictograms, Volumetric Analysis, and Solution Preparation (2 lectures)
- Acid base titration (2 lectures)
- Precipitation titration (2 lectures)
- Spectrophotometric analysis (2 lectures)