



## SYLLABUS

- I. Title:** Principles of General Chemistry, Organic Chemistry and Biochemistry Laboratory
- II. Course Code:** QUIM 3052
- III. Contact hours/credits:** Three hours per week/zero credits
- IV. Co-requisite:** QUIM 3051
- V. Course Description:** Laboratory of three hours weekly that complements the course of general chemistry, organic chemistry and biochemistry. Includes experiments of general chemistry, organic chemistry and biochemistry experiments.
- VI. Learning Objectives:**
1. Understand and apply safety rules in a chemistry laboratory.
  2. Uses the safety rules that apply in the handling of chemical substances.
  3. Learn laboratory techniques to measure properties such as mass, volume and many others.
  4. Experience in chemical concepts such as physical and chemical properties, simple chemical reactions and solution preparation.
- VII. Course Outline:**
1. Introduction and Safety Rules
  2. Measurements and Significant Figures
  3. Density and Specific Gravity
  4. Chemical Reactions
  5. Acids, Bases, pH and Buffers
  6. Acid-Base Titration
  7. Chemical test for Functional Groups in Organic Compounds
  8. Synthesis of Aspirin
  9. Saponification Reaction: Synthesis of Soap
  10. Amino acids and Proteins

11. Carbohydrates

12. Lipids

**VIII. Instructional Techniques**

- Theory Discussion
- Procedure Discussion
- PowerPoint presentations
- Equipment assembly demonstration
- Collaborative laboratory experience

**IX. Learning Resources and Minimum Required Installations and Facilities:**

- Laboratory equipment: materials and chemical substances
- Laboratory manual
- Laboratory notebook
- Personal safety equipment: glasses and safety coat

**X. Evaluation Techniques:**

The student will receive a percentage as final laboratory grade which is part of the course QUIM 3051. This grade corresponded to a 25% of the course final grade. The laboratory percentage is calculated with the evaluation of:

Two partial exams	200 points
Laboratory Notebook	55 points
<u>Reports and pre-labs</u>	<u>175 points</u>
<b>Total</b>	<b>430 points</b>

**XI. Reasonable Accommodation:**

Students who are sheltered under Law 51 or receive vocational rehabilitation services that require reasonable accommodations must inform the professor at the beginning of the semester by bringing an official letter that is sent from the office that deals with the matters of persons with impediments at the university in order to offer the necessary accommodations in accordance to the specifications that are delineated in said document.

**XII. Academic Integrity:**

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 12-2009-2010) states that academic dishonesty includes, but not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person's answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.

**XIII. Textbook:**

