



SYLLABUS

I. Title: Principles of General Chemistry, Organic Chemistry and Biochemistry

II. Course Code: QUIM 3051

III. Contact hours/credits: Four hours per week/five credits

IV. Co-requisite: QUIM 3052

V. Course Description: This course is a compendium of general chemistry, organic chemistry and biochemistry design for health sciences students.

VI. Learning Objectives:

By the end of the course students will be able to:

1. Define general chemistry, organic and biochemistry concepts.
2. Analyze and solve applied mathematical problems.
3. Demonstrate the importance of chemistry in the process that takes place in living organism and health sciences.

VII. Course Outline:

Chapter 1: Chemistry and Measurements

Chapter 2: Matter and Energy

Chapter 3: Atoms and Elements

Chapter 4: Compounds and Bonds

Chapter 5: Chemical Quantities and Reactions

Chapter 6: Gasses

Chapter 7: Solutions

Chapter 8: Acids and Bases

Chapter 9: Nuclear Radiation

Chapter 10: Introduction to Organic Chemistry

Chapter 11: Unsaturated Hydrocarbons

Chapter 12: Organic Compounds, Oxygen and Sulfur

Chapter 13: Carbohydrates

Chapter 14: Carboxylic Acids, Esters, Amines and Amides

Chapter 15: Lipids

Chapter 16: Amino acids, Proteins and Enzymes

VIII. Instructional Techniques

- Conference
- Discussion
- PowerPoint presentations
- Problem Solving
- Laboratory experiences

IX. Learning Resources and Minimum Required Installations and Facilities:

- Textbook
- Library access
- Multimedia resources

X. Evaluation Techniques:

Four partial exams	60 %
Final exam	15 %
Laboratory experiences	25 %
Total	100%

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. Grading Scale:

100 – 87% A	76 – 60% C	49 – 0% F
86 – 77% B	59 – 50% D	

XIV. Textbook:

Timberlake, K.C. (2013). **Química General, Orgánica y Biológica. Estructuras de la Vida** (4^{ta} edición). México: Pearson Education Inc.

XV. Bibliography:

Denniston, K.J., Topping, J.J. M. and Caret, R.L. (2014). **General, Organic and Biochemistry** (8^{va} edición). New York, USA: McGraw-Hill.

Frost, L.& Deal T. (2014). **General, Organic and Biological Chemistry** (2da edición). Pearson Education Inc., USA.

McMurry, J., Ballantine, D. S., Hoeger, C. A., Peterson, V. E. (2013). **Fundamental of General, Organic, and Biological Chemistry** (7^{ma} edición). USA: Pearson Education Inc.

Seager, S. L.& Slabaugh, M. R. (2014). **Chemistry for Today: General, Organic, and Biochemistry** (8^{va} edición). USA: Brooks/Cole, Thomson Learning Inc.