



## **Course Description**

### **BCH3023L | Introductory Biochemistry Laboratory | 2.00 credits**

This laboratory course complements the lecture corequisite BCH 3023, which involves the study of the fundamental components of biochemistry. In this laboratory course students will learn and will be provided with hands-on experiences with the concepts addressed in the lecture course. Prerequisites: BSC2010/L, 2011/L, CHM2200 or CHM2211/L. Corequisite: BCH3023.

## **Course Competencies**

**Competency 1:** The student will perform analyses of biomolecules by:

1. Separating and identifying amino acids using chromatographic techniques
2. Isolating, characterizing, and/or identifying proteins
3. Determining enzyme kinetic parameters
4. Isolating, characterizing, and/or identifying carbohydrates
5. Isolating, characterizing, and/or identifying lipids
6. Isolating, characterizing, and/or identifying nucleic acids

**Competency 2:** The student will utilize standard biochemistry laboratory techniques by:

1. Preparing buffer solutions
2. Analyzing biomolecules using spectrophotometry
3. Purifying biomolecules by homogenization and centrifugation
4. Disposing of chemical waste according to general safety standards

**Competency 3:** The student will gather, record, and analyze qualitative and quantitative data accurately by:

1. Using laboratory glassware for volume measurement, manipulating instruments, such as pipettes and volumetric flasks, in a manner that achieves accuracy and precision
2. Measuring masses using standard and analytical balances
3. Demonstrating proficiency in instrumentation by using instruments such as spectrophotometers, pH meters, and centrifuges
4. Creating notebooks, protocols, and laboratory reports that are clear and understandable and that accurately represent the data collected
5. Displaying experimental data in a spreadsheet and/or graphically
6. Performing appropriate calculations with quantitative data
7. Correlating observations with chemical and/or physical processes

## **Learning Outcomes:**

- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information
- Demonstrate knowledge of ethical thinking and its application to issues in society