



### **Course Description**

#### **CHM1033L | Chemistry for Health Sciences Lab | 1.00 credit**

This course emphasizes chemistry topics related to the allied health sciences. Students will learn the essentials of inorganic chemistry, organic chemistry, biochemistry, and their application to physiological functions in a laboratory setting. Prerequisite: MAT1033 Corequisite: CHM1033.

### **Course Competencies:**

**Competency 1:** The student will demonstrate cognitive objectives from the laboratory experience by:

1. Collecting measurement data, including length, mass, and volume of various objects using the Metric system
2. Converting figures using the Metric and English systems
3. Determining the presence of common cations and anions by using precipitation, complexation, and gas evolution reactions
4. Preparing various aqueous solutions and analyzing the phenomena of dialysis and osmosis
5. Identifying different types of electrolytes by analyzing their electrical conductivity
6. Determining the pH values of various solutions of acids, bases, and buffers
7. Examining the structure, properties, and reactions of several organic compounds such as alkanes, alkenes, alkyl halides, alcohols, esters, aldehydes, ketones, carboxylic acids, carbohydrates, lipids, and proteins
8. Illustrating carbohydrate chemistry by outlining the properties and chemical reactions of representative carbohydrates
9. Examining lipid chemistry by outlining its properties and chemical reactions
10. Examining protein chemistry by outlining the properties and chemical reactions of representative proteins.
11. Examining enzyme chemistry by outlining its properties and chemical reactions
12. Illustrating the process of digestion by simulating simple digestive processes using enzymes and food substances in the laboratory

**Competency 2:** The student will demonstrate the following effective objectives concerning safety in the laboratory by:

1. Demonstrating a commitment to safety by following all safety rules and procedures
2. Demonstrating a professional attitude and respect for laboratory responsibilities by maintaining the laboratory areas in a clean and neat manner
3. Demonstrating a willingness to respond to the material of the course by attending class regularly
4. Demonstrating responsibility for the successful completion of laboratory work by coming to the laboratory prepared to perform procedures scheduled for the laboratory session

**Competency 3:** The student will demonstrate proficiency in the following psychomotor objectives by:

1. Using laboratory glassware for measuring and transferring liquids, such as graduated cylinders, pipets, and beakers
2. Operating electronic balancing to obtain mass measurements
3. Operating and manipulating volumetric equipment in a manner that achieves both accuracy and precision
4. Handling laboratory equipment smoothly and without hesitation

### **Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information