Miami Dade College

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, 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 affective 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 all 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, pipettes and beakers
2. Operating electronic balancing in order 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

General Education Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information