## **CH 106: INTRODUCTION TO CHEMISTRY III**

## **Transcript title**

Introduction to Chemistry III

#### **Credits**

5

## **Grading mode**

Standard letter grades

#### **Total contact hours**

70

#### **Lecture hours**

40

#### Lab hours

30

## **Prerequisites**

CH 105

### **Course Description**

Builds on concepts from CH 105 introducing basic principles of general and biochemistry, including consideration of protein, carbohydrate and lipid structure and metabolism, bioenergetics, enzymes and nucleic acid chemistry.

## **Course learning outcomes**

- 1. Draw and interpret various types of structures of biomolecules.
- 2. Apply fundamental concepts of chemical structure to the description of major biomacromolecules: proteins, carbohydrates, and DNA, and also lipids; connect biochemical roles and properties of each of these substances to their structural elements and overall structures.
- 3. Explain in various contexts molecular recognition, and apply these understandings to descriptions of enzymes, receptors, communication between cells, recognition of self and non-self, etcetera.
- 4. Describe enzymes as biological catalysts that can be regulated through various means.
- 5. Link disease states, the action of drugs, and healthy physiology to biochemical processes.
- 6. Adopt appropriate terminology to read, write, and interpret information of a biochemical nature.
- 7. Describe central metabolic pathways and determine the consequences of alterations to such pathways that may result from disease or drug interference with their functioning.
- 8. Describe, using biochemical description, the ways that organisms extract and use energy from their environment.
- 9. Interpret and carry out a set of written experimental instructions and then to convey the experimental results in a laboratory report.
- 10. Use scientific (inductive) reasoning to draw appropriate conclusions from data sets or theoretical models.
- 11. Characterize arguments as scientific or not scientific.

- 12. Make measurements and operate with numbers properly to convey appropriate levels of certainty when drawing conclusions from experimental data.
- 13. Identify patterns in data by graphical means.

# **General education/Related instruction lists**

Science Lab