

Minnesota State College Southeast

BIOL 1510: Fundamentals of Biology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Fundamentals of Biology provides an introduction to biological concepts necessary for successful completion of typical college level biology courses. The course will provide an introduction to the scientific method, homeostasis, levels of biological organization, mechanisms of cellular transport, and basic metabolism. (Prerequisite: None) (3 Credits: 3 lecture/0 lab)

B. COURSE EFFECTIVE DATES: 12/04/2009 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Applications of the scientific method
2. Homeostatic mechanisms
3. Levels of biological organization from atom to organism
4. Major functions of the cell
5. Genotype, phenotype and basic patterns of inheritance

D. LEARNING OUTCOMES (General)

1. List the steps of the scientific method and explain the role of controls in scientific experiments
2. List the levels of biological organization from atom to organism
3. Describe how electrons, protons, and neutrons contribute to basic atomic structure and the formation of ions
4. Describe the nature of ionic, covalent, and hydrogen bonds in forming molecules
5. Compare and contrast the major classes of organic molecules
6. Describe the structure and unique properties of water
7. Describe the structure of a cell and the function of the organelles within a typical cell including the plasma membrane
8. Define and describe the role of enzymes
9. Define and describe the role of ATP within a cell
10. Describe the process of aerobic cellular respiration including the steps of glycolysis, the citric acid cycle, and the electron transport chain
11. Compare and contrast the processes of mitosis and meiosis
12. Explain the steps of protein synthesis
13. Describe the function and main components of the major body systems

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted