BIOL 1001: General Biology I (CBIO 1013)

BIOL 1001 Companion Course- Choice Model

Course Description:
BIOL 1001 introduces biological principles including scientific method, basic biochemistry, cell structure and function, metabolism, genetics, and evolution. Students cannot use both this course and BIOL 1201 to meet a degree's requirements.

The Companion Course is designed to support students as they progress through the BIOL 1001 course. The Choice Model gives students the freedom to choose whether they would like their final grade reported on their college transcript at the conclusion of the course.

Credit Graduating Institution:
Louisiana State University-Alexandria (LSUA)

Student Demographic:
10_{th}-12_{th} High School Students

Prerequisites:
ACT score of 18 or higher in English and 19 or higher in Math OR permission of instructor with a recommendation from a high school counselor

Unit/Topics:

1. Exploring Life
2. Chemical Basis for Life
3. Molecules of Cells
4. Cell Structure and Function
5. Basic Energy Concepts and Membrane Transport
6. How Cells Harvest Chemical Energy
7. Photosynthesis
8. Cellular Reproduction and Inheritance
9. Genetics and Heredity
10. Concepts of Evolution

Learning Outcomes:
To have a functional understanding of the major concepts listed in the course outline, and to be able to discuss, explain, and answer questions concerning the following:

1. Explain the philosophy of science and how the scientific method directs the investigation of naturally occurring phenomena.
2. Describe the structure and function of carbohydrates, lipids, proteins, and nucleic acids in living organisms.

3. Describe the structure and functions of the cell wall, the plasma membrane, cytoplasm, and cellular organelles in plant and animal cells.
4. Explain the fundamental metabolic process: photosynthesis and cellular respiration.
5. Discuss the fundamental principles of evolutionary theory: how populations change and how these changes may lead to the rise of new species.
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7. Describe the structure and function of viruses.
8. List the levels of the taxonomic hierarchy.