Course Outcome Summary

General Education Satisfier Course

BIOL 151 Biological Sciences I

Course Information
Division: Science/Mathematics
Contact Hours: 90
Lecture Hours: 45
Lab Hours: 45
Total Credits: 4

Prerequisites
Reading 090, English 090 and MATH 092 or MATH 150 or qualifying scores on ACT or COMPASS tests

Course Description
General Biology is designed to cover selected biological topics which should help the student gain an understanding and appreciation of basic life functions, man’s relationship to the environment, and the application of biological data to effective decision making. The class includes units of modern cell biology, chemistry, metabolism, genetics, evolution and ecology. This is the first semester of a two-semester sequence.

This course is approved as a General Education competency satisfier.

General Education Goal: Critical Thinking
Competency: Understand the elements of scientific inquiry and scientific principles in a natural science college laboratory course setting.
Learning Outcome: Students will use the scientific method to define a problem, utilize appropriate methods to solve the problem, and propose and evaluate a solution to the problem.

General Education Learning Objectives
A. Observe and describe natural phenomena and formulate hypotheses.
B. Plan and implement scientific experiments to test hypotheses.
C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
D. Evaluate experimental data and propose solutions based on this data.
E. Evaluate the proposed implications of a solution.

Course Outcomes
In order to evidence success in this course, the students will be able to:

1. Achieve an understanding of how science influences our daily lives.
   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.
2. Demonstrate the ability to apply the process of science (scientific method).

   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

3. Identify how living systems are interconnected and interacting.

   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

4. Describe the basic units of structure and how they define the functions of all living things.

   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

5. Conceptualize the structure and function of the DNA molecule.

   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

6. Explain how the diversity of life evolved over time by processes of mutation, selection, and genetic change.

   Applies to General Education Objectives
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
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7. Explain the processes through which growth and behavior of organisms are activated through the expression of genetic information in context.
   
   Applies to General Education Objectives
   
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

8. Explain how biological systems grow and change by processes based upon chemical transformation pathways and are governed by the laws of thermodynamics.
   
   Applies to General Education Objectives
   
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

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By: