

Rationale

In today's world, scientific literacy is a necessity for everyone in order to use scientific information to make wise choices. The job market demands advanced skills, requiring people to learn, reason, think creatively, make decisions, and solve problems. An understanding of biological science and scientific processes contribute in an essential way to these skills.

Biological sciences provide the basic concepts necessary to understand the physiology and chemistry of life at the cellular level. It also provides a basic knowledge of organism classification and the interactions between organisms within an ecosystem. By studying these concepts, students gain a better understanding of how and why life works the way it does.

Course Description

This course covers selected topics in biology at a pace and level appropriate for the student who has difficulty learning scientific principles.

Prerequisites

Prerequisite: Both Semesters of Earth/Environmental Science Concepts with a passing grade and current teacher approval

Open to: 10

Credit: 1 Unit - Two Semesters

Course Objectives

1. The student will read and discuss structure and function with 80% accuracy. Assessed on End of Course Exams, Biology. (SC3; 1.6, 1.7, 1.8, 1.10, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.3) (A+: Speaking)

ACT standards:

- Select two or more pieces of data from a simple data presentation. Interpretation of Data 301
- Understand basic scientific terminology. Interpretation of Data 302
- Find basic information in a brief body of text. Interpretation of Data 303
- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation. Interpretation of Data 304
- Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram). Interpretation of Data 401

- Compare or combine data from a simple data presentation (e.g., order or sum data from a table). Interpretation of Data 402
- Translate information into a table, graph, or diagram. Interpretation of Data 403
- Understand the methods and tools used in a moderately complex experiment. Scientific Investigation 401
- Understand a simple experimental design. Scientific Investigation 402
- Identify the control in an experiment. Scientific Investigation 403
- Identify similarities and differences between experiments. Scientific Investigation 404

2. The student will read and interpret basic DNA structure and function with 80% accuracy. Assessed on End of Course Exams, Biology. (SC3; 1.6, 1.7, 1.8, 1.10, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.3) (A+: Reading)

ACT standards:

- Select two or more pieces of data from a simple data presentation. Interpretation of Data 301
- Understand basic scientific terminology. Interpretation of Data 302
- Find basic information in a brief body of text. Interpretation of Data 303
- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation. Interpretation of Data 304
- Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram). Interpretation of Data 401

- Compare or combine data from a simple data presentation (e.g., order or sum data from a table). Interpretation of Data 402
- Translate information into a table, graph, or diagram. Interpretation of Data 403
- Understand the methods and tools used in a moderately complex experiment. Scientific Investigation 401
- Understand a simple experimental design. Scientific Investigation 402
- Identify the control in an experiment. Scientific Investigation 403
- Identify similarities and differences between experiments. Scientific Investigation 404

3. The student will classify living organisms and understand their interactions with both biotic and abiotic factors with 80% accuracy. Assessed on End of Course Exams, Biology. (SC4, 5, 8; 1.6, 1.7, 1.8, 1.10, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.3) (A+: Research)

ACT standards:

- Select two or more pieces of data from a simple data presentation. Interpretation of Data 301
- Understand basic scientific terminology. Interpretation of Data 302
- Find basic information in a brief body of text. Interpretation of Data 303
- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation.

Interpretation of Data 304

- Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram).

Interpretation of Data 401

- Compare or combine data from a simple data presentation (e.g., order or sum data from a table). Interpretation of Data 402
- Translate information into a table, graph, or diagram. Interpretation of Data 403
- Understand the methods and tools used in a moderately complex experiment. Scientific Investigation 401
- Understand a simple experimental design. Scientific Investigation 402
- Identify the control in an experiment. Scientific Investigation 403
- Identify similarities and differences between experiments. Scientific Investigation 404

4. The student will perform and write about scientific experiments with 80% accuracy. Assessed on End of Course Exams, Biology. (SC3, 4, 5, 8; 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.10, 2.3, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.3) (A+: Writing)

ACT standards:

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- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation.

Interpretation of Data 304

- Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram).

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BOE 11-19-15