

**I. COURSE INFORMATION**

- A. Biology 102 Principles of Biology
- B. 5 credit hours
- C. Mader, Sylvia S. *Essentials of Biology*. 5<sup>th</sup> ed. New York: McGraw-Hill, 2018
- D. Prerequisites: Eligible for COL101 English Composition I or completion of COL101
- E. KRSN: BIO 1010/1011/1012 General Biology and Lab

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

**II. COURSE DESCRIPTION**

Principles of Biology is an integrated lecture and laboratory course designed for non-biology majors seeking to learn basic biological concepts. The course surveys many of life's fundamental processes, including cell and tissue structures and their functions, metabolism and photosynthesis, genetics, animal and plant structures and their functions, evolution of animals, and ecology.

**III. LEARNING OUTCOMES**

- A. Demonstrate an understanding of the nature of science
- B. Demonstrate an understanding of the levels of organization and emergent properties of life
- C. Demonstrate an understanding of bioenergetics
- D. Demonstrate an understanding of the importance of reproduction in maintaining the continuity of life
- E. Demonstrate an understanding of applying principles of genetics to unity and diversity of life
- F. Demonstrate an understanding of discussing evolution as the mechanism of change in biology
- G. Demonstrate an understanding of the principles of ecology
- H. Laboratory topics/skills:
  - Microscopy
  - Quantitative measurement skills incorporating the metric system
  - Analytical and statistical skills including presenting and/or interpreting graphs and tables
  - Experience with living organisms in the laboratory and/or field setting
  - Identification and proper use of laboratory equipment including the most current technology available
  - Field experience
  - Basic biochemistry
  - Organismal and cellular structure and function
  - Classification/taxonomy
  - Evolution/natural selection
  - Genetics
  - Reproduction (cellular and organismal)

**IV. MAJOR CONTENT AREAS**

- A. Scientific method
- B. Chemical basis of life
- C. The cell
- D. Bioenergetics
- E. Cellular reproduction
- F. Genetics
- G. Evolution
- H. Ecology

**V. ASSIGNMENTS (may include but are not limited to)**

- A. Assignments

- B. Laboratory activities
- C. Quizzes and exams

**VI. EVALUATION METHODS** (may include but are not limited to)

- A. Lecture and lab exams
- B. Projects and lab exercises
- C. Assignments
- D. Quizzes and exams