

**SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS**

I. TITLE OF COURSE: BI1305 - Principles of Biology

**II. COURSE DESCRIPTION: 5 credit hours
3 credit hours of lecture and 2 credit hours of lab per week.**

Offered fall and spring semesters. A foundation emphasizing human interaction and place within all levels of the biosphere and the scientific process. The course will incorporate six unifying principles: 1) Evolution: Patterns and Products of Change, 2) Interaction and Interdependence, 3) Genetic Continuity and Reproduction, 4) Growth, Development, and Differentiation, 5) Energy, Matter, and Organization, and 6) Maintenance of Dynamic Equilibrium. Inquiry oriented investigations will be used to introduce, explore, and expand on concepts discussed in the classroom. For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

Edukan course number:BI100

Pre-requisite:

Refer to placement matrix.

III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:

The Science Program at Seward County Community College provides opportunities to improve and enhance each student's understanding and comprehension of the natural world through a variety of courses and experience to develop a scientifically literate citizen.

IV. TEXTBOOK AND MATERIALS:

This is an e-book that will be purchased online after class starts:

Biology: Concepts and Investigation (Hoefnagels, 5th ed.) Mc Graw-Hill
Connect

V. SCCC OUTCOMES:

- 1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life
- 2: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 3: Communicate their ideas clearly and proficiently in speaking, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 4: Demonstrate mathematical skills using a variety of techniques and technologies.
- 5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information
- 6: Exhibit skills in information and technological literacy
- 7: Understand each other, moving beyond simple acceptance to embracing and celebrating the rich

dimensions of diversity by working as a team to learn, engaging with community, exhibiting cultural awareness, and creating equity.

VI. COURSE OUTCOMES:

1. Demonstrate an understanding of the nature of science
2. Demonstrate an understanding of the levels of organization and emergent properties of life
3. Demonstrate an understanding of bioenergetics
4. Demonstrate an understanding of the importance of reproduction in maintaining the continuity of life
5. Demonstrate an understanding of applying principles of genetics to unity and diversity of life
6. Demonstrate an understanding of evolution as the mechanism of change in biology
7. Demonstrate an understanding of the principles of ecology
8. Demonstrate laboratory skills
9. Demonstrate the ability to think critically
10. Communicate ideas clearly in writing

VII. COURSE OUTLINE:

1. What is Biology and the Scientific Method.
2. The Organization of Life, Chemical and Cellular
3. Enzymes and Biochemical Pathways. (Cellular Respiration and Photosynthesis)
4. DNA and RNA
5. Mitosis, Meiosis
6. Mendelian Genetics
7. Diversity Within a Species, Evolution, Speciation, Natural Selection
8. Ecosystem Organization, Community Interactions, Population Ecology
9. The Classification and Evolution of Organisms
10. Microorganisms
11. Plants, Animals

VIII. INSTRUCTIONAL METHODS:

1. Lecture and discussion
2. Laboratory experiments and recitation sessions
3. Report writing and laboratory exercises
4. Problem solving assignments
5. Use of biology software, and video viewing
6. Demonstrations related to subject

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

1. Microscopes and slides
2. Models
3. Computer Simulations
4. Textbook and on-line resources
5. Outdoor Classroom

X. METHODS OF ASSESSMENT:

SCCC Outcome #1 will be assessed using class discussions, tests, and reports
SCCC Outcome #2 will be assessed using quizzes, exams, and reports
SCCC Outcome #3 will be assessed using class discussions and presentations
SCCC Outcome #4 will be assessed using quizzes and lab reports
SCCC Outcome #5 will be assessed using reports and lab activities
SCCC Outcome #6 will be assessed using tests, reports, and lab activities
SCCC Outcome #7 will be assessed based on group work

XI. ADA STATEMENT:

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobble Academic building, room 149 A.

XII. CORE OUTCOMES PROJECT:

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
KRSN: BIO1010

Syllabus Reviewed: 5/16/2022