CLOUD COUNTY COMMUNITY COLLEGE

Our Mission: Cloud County Community College prepares students to lead successful lives and enhances the vitality of our communities.

**GENERAL INFORMATION**

**Course Number and Title:** SC 110 Principles of Biology I

**Term and Year:**Academic Year 2022-2023

**Credit Hours**: 5

**Course Description**: Principles of Biology I is a combined lecture and laboratory course for students planning to choose biological sciences as major and take additional courses in biology. Covers contents of basic biochemistry, cell structure and function, molecular biology, and genetics, integrated in an evolutionary perspective. Meets three hours of lecture and three hours of laboratory per week. Equivalent to Biology I for Majors With Lab approved by Kansas Board of Regents for system-wide transfer.

**Prerequisites**: None

**Division:** Mathematics, Science and Technical Programs
Department: Science

**STUDENT LEARNING OUTCOMES AND ASSESSMENT**

**Course Learning Outcomes**

For this course, students are expected to demonstrate the skills associated with the course learning goals as described by the student learning outcomes below:

1. Demonstrate an understanding of the nature of science

a. Scientific processes

b. Scientific methods

2. Demonstrate an understanding of the levels of organization and emergent properties of life

a. Basic biological chemistry

b. Structure and function of biological molecules

c. Cellular structure and functions

3. Demonstrate an understanding of bioenergetics

a. Enzyme activity

b. Cellular respiration

c. Photosynthesis

4. Demonstrate an understanding of cellular reproduction

a. Binary fission

b. Mitosis

c. Meiosis

5. Identify the basic principles of Mendelian and molecular genetics and relate these to the basic principles of Natural Selection and evolution

a. Classical genetics

b. Molecular genetics

i. DNA replication

ii. Gene expression and regulation

6. Design and perform experiments in a laboratory setting

a. Microscopy

b. Quantitative measurement skills incorporating the metric system

c. Analytical and statistical skills including presenting and/or interpreting graphs and tables

d. Experience with living organisms in the laboratory

The learning outcomes detailed in this syllabus meet or exceed the learning outcomes specified by the Kansas Core Outcomes Project for this course as sanctioned by the Kansas Board of Regents to ensure transfer between Kansas colleges and universities. Systemwide Transfer (SWT) Code: BIO1020

In class, students are assessed on the mastery of these outcomes using the learning management system. Student names will not be used when reporting results. Outcomes-based assessment is used to improve the instructional planning, design, and quality of student learning throughout the college

**General Education Outcomes**

For this course, students are expected to demonstrate the skills associated with the college wide learning goals as described by the general education/program outcomes below:

GESc1: Apply the scientific process to evaluate current issues and circumstances

GESc2: Demonstrate scientific literacy and knowledge about the study of matter, life and the universe.

GESc3: Critically analyze events through a scientific lens.

GESc4: Demonstrate quantitative reasoning and problem-solving.

Artifacts of student work are collected from general education courses and reviewed by a faculty committee to assess general education outcomes. Artifacts may also be reviewed by a professional outside the college. Student names will not be used when reviewing artifacts nor reporting results. Program accomplishment is partially measured through performance on program outcomes. Outcomes-based assessment is used to improve the instructional planning, design, and quality of student learning throughout the college.

**Institutional Learning Outcomes**

For this course, students are expected to demonstrate the skills associated with the college wide learning outcomes as described below.

*Sustainability*

ILO\_S1: Students will understand the importance and implementation of sustainable practices that meet the needs of today without compromising the needs of the future.

In class, students are assessed on the mastery of these outcomes. Student names will not be used when reporting results. Outcomes-based assessment of the institutional learning outcomes is used to ensure we are meeting the mission of the college, following the guiding values and enhance instructional planning, design, and quality of student learning throughout the college.