

COCONINO COMMUNITY COLLEGE COURSE OUTLINE

Prepared by: Bryan Bates, M.A.

General Education Outcomes reviewed by: Ana Novak-Goodman

Revised by: Melinda McKinney and Aaron Tabor

Status: Permanent

Date: Nov 1, 1999

Date: Mar 23, 2001

Date: Fall 2018

A. Identification:

1. Subject: Biology
2. Course Number: BIO 181  BIO 1181
3. Course Title: Unity of Life I: Life of the Cell
4. Credit Hrs: 4
5. Catalog Description:

An introductory course in Biology emphasizing central principles related to cellular and molecular processes in the cell. Course will include molecular structure, cell structure, reproduction, metabolism molecular genetics and evolution.

General Education: Physical and Biological Sciences Three lecture; three lab.

B. Course Goals:

To give students a greater understanding of the principles of cellular biology and a foundation in the core concepts of biology necessary for continued work in the field.

GECC Course
CLICK HERE for
Student Outcomes list

C. Course Outcomes:

Students will:

1. Evaluate scientific questions using the scientific method and hypothesis testing.
2. Demonstrate an understanding of the molecular structure and function of biological molecules.
3. Demonstrate an understanding of basic cellular structure and function
4. Demonstrate an understanding of enzyme-mediated metabolic reactions.
5. Demonstrate an understanding of the basic process of cell signaling and signal transduction.
6. Demonstrate an understanding of cellular respiration.
7. Demonstrate an understanding of photosynthesis.
8. Evaluate patterns of genetic inheritance.
9. Demonstrate an understanding of cellular reproduction.
10. Demonstrate an understanding of the processes of DNA replication, transcription and translation.
11. Evaluate the impact of biotechnology and genetic modification on society.
12. Analyze how biological concepts in this course affect other fields of study.

D. Course Assessment:

Will include:

1. Comprehensive final exam
2. Multiple laboratory reports which include data analysis and written

analysis.

E.

Course Content:

Will include:

1. Scientific method
2. Characteristics of life
3. Evolution and phylogeny
4. Atomic properties, acids, bases and buffers
5. Covalent, ionic and hydrogen bonding
6. Structure and function of biological molecules: proteins, carbohydrates, lipids and nucleic acids
7. Basic cell structure and function in prokaryotic and eukaryotic organisms
8. Metabolic activity and enzyme-mediated reactions
9. Cellular respiration
10. Photosynthesis
11. Eukaryotic cellular reproduction: mitosis and meiosis
12. Mendelian and Non-Mendelian genetic theory
13. DNA replication
14. Protein synthesis (transcription and translation)

