COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Revision by: Bryan Bates	January 23, 1997
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General Education criteria reviewed by: Bryan Bates	November 16, 1998
Revised by: Bruce Belman	Spring 2001
Revised by: Bryan Bates	December 15, 2014
Revised by: Melinda McKinney	Fall, 2018

Status: Permanent
Effective: Fall 2018

A. Identification:
   1. Subject Area: Biology (BIO)
   2. Course Number: 105
   3. Course Title: Environmental Biology
   4. Credit Hours: 4
   5. Course Description: Basic concepts of ecology and the importance of human interaction with the natural ecosystem. Field trips. Pre/Co-requisites: ENG 102 and MAT 091 or placement beyond prerequisite courses or Consent of Instructor. General Education: Physical and Biological Sciences. Special Requirements: Contemporary Global/International Awareness or Historical Awareness and Intensive Writing/Critical Inquiry. Three lecture. Three lab.

B. Course Goals:
   To give students a greater understanding of:
   1. the fundamental forces which act within natural systems;
   2. basic ecological principles and methodologies for their measurement;
   3. and the effects of human behavior and population upon natural systems.

C. Course Outcomes: Students will:
   1. Demonstrate an understanding of ecological relationships between organisms and their environment.
   2. Demonstrate an understanding of key concepts in evolutionary biology.
   3. Demonstrate scientific quantitative skills, such as collection and analysis of data and hypothesis testing.
   4. Demonstrate the ability to communicate scientific ideas in writing supported with credible citations.
   5. Demonstrate an understanding of major anthropogenic effects on global, regional and local biological systems.
   6. Utilize the major steps in the writing process (outlining, drafting, and revising).
   7. Utilize diagrams, graphs and/or tables to communicate data and scientific observations.
   8. Communicate the results of laboratory experiments in a written format.
   9. Analyze and test experimental hypotheses related to core concepts using the scientific method.

D. Course Outcomes Assessment will include:
   1. Comprehensive final exam
   2. A major writing project (minimum 1,500 words) of scientific writing supported with credible in-text citations and references. Successful completion of this project is REQUIRED to pass this course.
   3. Multiple laboratory reports (totaling a minimum of 1,500 words) that include data analysis and presentation in written and graphical form.

E. Course Content will include:
   1. Energy flow through physical and biological systems.
   2. Chemical cycles: hydrologic cycle, carbon cycle and nitrogen cycle.
   3. Biodiversity at genetic, species, and functional levels.
   4. Biotic and abiotic ecosystem level interactions.
   5. Meteorological processes.
   6. World and regional biomes.
   7. Population structures and dynamics, including human population growth.
   8. Anthropogenic effects on ecosystems including climate change and loss of biodiversity.
   9. Analysis of topical environmental issues and related conservation strategies.