

COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Status: Permanent
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A. Identification:

1. Subject: Biology (BIO)
2. Course Number 182 SUN # BIO 1182
3. Course Title: Unity of Life II: Multicellular Organisms
4. Credit Hours: 4
5. Course Description: This course emphasizes general concepts pertaining to the evolution, biodiversity, and ecology of multicellular organisms. General Education: Physical and Biological Sciences. Three lecture. Three lab. Spring.

B. Goals: To provide learners with:

1. an appreciation for the beauty and diversity of life;
2. recognition of processes of and patterns in evolution;
3. a comprehensive understanding of the interaction between living organisms and their environment;
4. and competency in using standard lab and field techniques, including research skills.

C. Course Outcomes: Students will:

1. Describe the theory of natural selection within evolution and the supporting evidence.
2. Describe prokaryotic evolution, anatomy, reproduction, physiology, and ecology.
3. Describe eukaryotic evolution, anatomy, reproduction, physiology, and ecology.
4. Describe plant evolution, anatomy, reproduction, physiology, and ecology.
5. Describe animal evolution anatomy, reproduction, physiology and ecology.
6. Analyze basic ecological principles including biogeochemical cycling.
7. Analyze and discuss the limitations of phylogenetic trees representing the evolution of all life.
8. Analyze the impact of humans on the Biosphere.
9. Evaluate ecosystem biodiversity and conservation ecology.
10. Utilize diagrams, graphs and/or tables to communicate data and scientific observations.
11. Communicate the results of laboratory experiments in a written format.
12. Analyze and test experimental hypotheses related to core concepts using the scientific method.
13. Explore how biology relates to other disciplines.

D. Course Outcomes Assessment will include:

1. comprehensive final exam or project;
2. intermittent exams or quizzes;
3. and various lab reports.

E. Course Content will include:

1. natural selection: definition, principles, and development of the theory of evolution by natural selection;
2. mechanisms of evolution including microevolution (population genetics) & macroevolution (speciation);
3. evidence for evolution by natural selection;
4. history of Life on Earth;
5. taxonomy, classification and phylogeny;
6. transition to land (plants and animals) including biological, anatomical, and physiological changes necessary;
7. principles of ecology including population, community and ecosystem ecology;
8. principles of conservation biology;
9. and human impact on ecosystems.

