Administrative Unit: Science Department

Course Prefix and Number: BIOL 112

Course Title: Principles of Biology II

Number of Credit Hours: 3 Lecture Hours: 3 Laboratory Hours: 0

Catalog Description: A continuation of BIOL 110. Topics to be covered include population genetics, evolution and natural selection, taxonomy, survey of plants and animals, and ecology and ecosystems. Prerequisite: BIOL 110.

Prerequisite(s)/Corequisite(s): BIOL 110.

Text(s): Recommended types of texts: textbooks listed are not necessarily the textbook(s) used in this course.


Course Objectives:

- To describe the basic evidence for evolution.
- To describe how population genetics and natural selection contribute to evolutionary theory.
- To describe the characteristics of major groups of living organisms.
- To apply the principles of ecology to ecosystem structure and function.

Measurable Learning Outcomes:

- Describe and illustrate the core principles of evolution.
- List the principle lines of evidence consistent with the theory of evolution.
- Define microevolution and distinguish between the evolutionary forces (agents) of microevolution.
- Differentiate between the modes of natural selection.
- Apply the biological species concept and give examples of how new species arise.
- List the taxonomic hierarchy.
- Describe the basic sequence and timing of life’s development on Earth.
- Name the domains and kingdoms of life and list defining characteristics of each.
- Define ecology.
- List characteristics used to describe populations and describe population growth patterns.
- Describe how species interact at the community level and list the effects of these interactions.
Provide examples of succession.
Outline the major biogeochemical cycles.
Illustrate energy movement in an ecosystem.
Compare characteristics of major biomes and aquatic ecosystems.

Topical Outline (major areas of coverage):
- Population genetics.
- Evolution and natural selection.
- Taxonomy
- Survey of organisms
- Ecology and ecosystems

Recommended maximum class size for this course: 35

Library Resources:
Online databases are available at http://www.ccis.edu/offices/library/resources.asp. You may access them from off-campus using your eServices login and password when prompted.

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Date: January 23, 2005

NOTE: The intention of the master syllabus is to provide an outline of the contents of this course, as specified by the faculty of Columbia College, regardless of who teaches the course, when it is taught or where it is taught. Faculty members teaching this course for Columbia College are expected to facilitate learning pursuant to the course objectives and cover the subjects listed in the topical outline. However, instructors are also encouraged to cover additional topics of interest so long as those topics are relevant to the course’s subject. The master syllabus is, therefore, prescriptive in nature but also allows for a diversity of individual approaches to course material.