Administrative Unit: Science Department

Course Prefix and Number: BIOL 222

Course Title: Biodiversity

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

Catalog Description: This course examines how and why diversification occurs by linking the processes of evolution to ecology. The historical and potential future impact of humans on biodiversity will also be examined. Crosslisted as ENVS 222. Prerequisite: BIOL 112.

Prerequisite(s)/Corequisite(s): BIOL 112.

Text(s): Textbook(s) listed is/are not necessarily the textbook(s) used in the course.

Most current editions of the following:


S. B. Carroll, et. al. *From DNA to Diversity*. Blackwell Publishing.

Course Objectives:

- To use taxonomic classification to illustrate evolutionary relationships.
- To explain how speciation is related to diversification.
- To link species diversity to the function of ecological systems.
- To describe the effects of human activities on biodiversity.

Measurable Learning Outcomes:

- Apply the taxonomic hierarchy to illustrate relationships between organisms.
- Explain the species concept and its importance.
- Outline mechanisms of speciation.
- Compare different measures of diversity.
- Interpret geographic differences in diversity.
- Apply theories of equilibrium to diversity in natural communities.
- Explain how biological diversity is related to the function of ecosystems.
- Analyze historical effects of human populations on diversity.
- Illustrate ways in which human populations affect diversity.
Topical Outline (major areas of coverage):

- Classification of organisms.
- Measurements of biological diversity.
- Geographic distribution of diversity.
- Mechanisms of diversification.
- Diversity in natural communities.
- Diversity and the functioning of ecosystems.
- Consequences of human activities.

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.

Prepared by: Julie Estabrooks

Name ____________________________ Signature ____________________________

Date: September 19, 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.

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