Administrative Unit: Science

Course Prefix and Number: BIOL 110L

Course Title: Principles of Biology Laboratory

Number of Credit Hours: 2 Lecture Hours: 0 Laboratory Hours: 2

Catalog Description: Laboratory experiences to complement BIOL 110. $20 lab fee. Prerequisite: BIOL 110 or concurrent enrollment. Students majoring in Biology must earn a grade of C or better. G.E.

Prerequisite(s)/Corequisite(s): BIOL 110 or concurrent enrollment.

Text(s): Textbooks listed are not necessarily the textbook(s) used in the course.

Most current edition of the following:

Richardson, D.J. & Richardson, K. E. *Biology: A Laboratory Guide to the Natural World.* Prentice Hall.


Course Objectives:

- To demonstrate basic laboratory techniques of experimentation and measurement using exercises which complement topics covered in BIOL 110 lecture.

Measurable Learning Outcomes

- Apply the scientific method.
- Distinguish between different cell types and identify cell structures and their functions.
- Summarize the major energy transformations that take place in plant and animal cells.
- Describe the processes of cell division.
- Demonstrate how genes and chromosomes carry and convey genetic information.
- Enumerate Mendelian principles and demonstrate basic genetic crosses.
- Illustrate how genetic abnormalities occur.
- Model DNA structure and replication.
- Summarize the events of genetic transcription and translation and identify the cellular structures involved.

Topical Outline (major areas of coverage):

- Basic principles of chemistry as they apply to living organisms.
- Cellular structures and their functions.
- Regulation of cellular function.
• Respiration and photosynthesis.
• Cell division and principles of inheritance.
• Protein synthesis.

Material from this course may be tested on the Major Field Test (MFT) administered during the Culminating Experience course for the degree.

Recommended maximum class size for this course: 24

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: April 21, 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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