

CUMBERLAND COUNTY COLLEGE

Course: BI 101 General Biology I

Credits: 4

Prerequisite: EN060 and MA091

Description:

An integrated course with laboratory exercises closely correlated to the lectures dealing with atomic basis of life and biomolecules; cell structure and function; cell metabolism; movement of materials across the membranes; photosynthesis, fermentation and respiration; cell division; Mendelian genetics; molecular basis of genetics; control of gene expression.

Learning Outcomes

At the completion of this course, students will be able to:

- Demonstrate knowledge of the fundamental concepts and theories that are the basis of the fields of chemistry, biochemistry, cell biology, metabolism and cellular regulation.
- Utilize various qualitative and quantitative problem-solving and critical thinking techniques to perform experimental procedures and analyze experimental data related to the fields listed above.
- Demonstrate proper use of the standard tools of the biological scientist.
- Use the scientific method of inquiry through the acquisition of scientific knowledge.

Topical Outline

- Biology and the Tree of Life
- Water and Carbon: The Chemical Basis of Life
- Protein Structure and Function
- Nucleic Acids and the RNA World
- An Introduction to Carbohydrates
- Lipids, Membranes and First Cells
- Inside the Cell
- Energy and Enzymes: An Introduction to Pathways
- Cellular Respiration and Fermentation
- Photosynthesis
- Cell-Cell Interaction
- The Cell Cycle
- Meiosis
- Mendel and the Gene
- DNA and the Gene: Synthesis and Repair
- How Genes Work
- Transcription, RNA, Processing, and Translation

- Control of Gene Expression in Bacteria
- Control of Gene Expression in Eukaryotes

Text:

Freeman, S., Quillin, K., Allison, L. (2014). *Biological Science* (5th Ed.). Pearson.

Academic Integrity:

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation. Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense. As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Tutoring & Project Assist:

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

Before Withdrawing From This Course:

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.