BIOL& 160 : General Biology with Lab, Cell Biology Emphasis

Credits 5
Quarter Offered Fall, Winter, Spring, Summer
Includes process of science, overview of central ideas of biology (unity, diversity, interdependence, evolution), basic chemistry concepts, biomolecules, cell structure, cell physiology (including enzyme function, energetics, synthesis of DNA, RNA and protein), cell reproduction, introduction to genetics. This class may include students from multiple sections. (Natural Sciences with Lab, Elective)
Prerequisites
Eligibility for both ENGL& 101 and MATH 90/91
Course Outcomes

Read, correctly interpret, and critically evaluate biological information in books, journals, online resources, and the popular media.
Explain and give examples of the basic themes and concepts of the chemistry of life including basic cell chemistry, properties of water and pH, basic organic chemistry, and properties of organic macromolecules (carbohydrates, lipids, proteins, and nucleic acids).
Explain and give examples of the basic themes and concepts of cell biology including cell structure and function, membrane structure and function, metabolism and enzyme function, respiration and fermentation, photosynthesis, cell communication, and mitosis.
Explain and give examples of the basic themes and concepts of genetics including meiosis and sexual life cycles, Mendelian genetics, chromosomes and non-Mendelian genetics, function of DNA (synthesis, transcription, and translation), regulation of gene expression, DNA tools and biotechnology, and genomes and their evolution.
Explain and give examples of the evolution and diversity of viruses, bacteria, and protists.
Apply quantitative analysis to solve problems in hypothetical and real situations.
Demonstrate ability to process information and experiences in the form of laboratory write-ups and project presentations to convey findings of library research and/or scientific inquiry using appropriate language, format, and graphical methods.
As a group (3-6 students) design and conduct a scientific exploration, interpret results, and explain findings in a logical and appropriate manner using critical thinking and problem solving skills.
Describe connections of the covered concepts of biology to their local environments, possible future careers, and daily lives.