



# Alabama Community College System

## BIO 103 Principles of Biology I

### I. BIO 103 Principles of Biology I – 4 Semester Hours

### II. Course Description

This is an introductory course for both science and non-science majors. It covers physical, chemical, and biological principles common to all organisms. These principles are explained through the study of cell structure and function, cellular reproduction, basic biochemistry, cell energetics, the process of photosynthesis, and Mendelian and molecular genetics. Also included are the scientific method, basic principles of evolution, and an overview of the diversity of life with survey of viruses, prokaryotes, and the protists. A 120-minute laboratory is required.

### III. Prerequisite

None

### IV. Textbook

Due to the varied selection of quality college level textbooks, each college will select the textbook needed to meet the requirements of this course.

### V. Course Objectives

By the end of the course, students will be able to

1. explain the fundamental processes of life;
2. apply the scientific method in theory and laboratory;
3. explain the diversity and taxonomic hierarchy of life;
4. differentiate the basic characteristics of viruses, eukaryotes, and prokaryotes;
5. summarize photosynthesis and cellular respiration, with an emphasis on the transformation of energy and matter;
6. apply the basic principles of genetics to predict inheritance patterns;
7. identify the basic principles of biochemistry including the structure and function of macromolecules;
8. describe cell structures and their functions;

9. differentiate the types and stages of cellular reproduction;
10. explain the processes of molecular genetics; and
11. demonstrate proper use of laboratory techniques and equipment.

## **VI. Course Outline of Topics**

1. Characteristics of Life
2. Scientific Method
3. Classification and Taxonomy
4. Viruses
5. Prokaryotes vs. Eukaryotes
6. Protists
7. Photosynthesis
8. Cell Respiration
9. Energy and Metabolism
10. Genetics
11. Macromolecules
12. Cell Structure and Function
13. Membrane Transport
14. Cellular Reproduction
15. Molecular Genetics
16. Basic Chemistry
17. Metrics and Measurement

## **VII. Evaluation and Assessment**

Grades will be given based upon A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, and F = below 60%.

## **VIII. Attendance**

Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

## **IX. Statement on Discrimination/Harassment**

It is the official policy of the Alabama Community College System and entities under its control, including all Colleges, that no person shall be discriminated against on the basis of any impermissible criterion or characteristic, including, without limitation, race, color, national origin, religion, marital status, disability, sex, age, or any other protected class as defined by federal and state law. (ACCS Policies 601.02 and 800.00)

## **X. Americans with Disabilities**

*The Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College.*