J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: BIO 101

Course Title: General Biology I

Course Description: Focuses on foundations in cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage, and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence. Prerequisite: Completion of ENF 2 and MTH 1-3, if required by placement test. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

General Course Purpose: This course is designed to meet the requirements of a transfer course in a science major’s curriculum at a four-year college or university.

Course Prerequisites and Co-requisites: Prerequisite: Completion of ENF 2 and MTH 1-3, if required by placement test

Course Objectives:
Upon completing the course, the student will be able to
a. List characteristics of life and give examples of each;
b. List the major kingdoms into which we group organisms;
c. Define evolution and briefly state Darwin’s contribution to this theory;
d. Define and be able to apply the following terms: observation, theory, law, controlled experiment, hypothesis, facts, and scientific method;
e. Explain the limitations of science;
f. Demonstrate the proper use of a microscope;
g. Name the standard metric units for length, mass, volume, and temperature;
h. Describe the central role of carbon and the importance of its bonding characteristics to living organisms;
i. Describe the origin of the earth and how the early environment led to the beginning of living organisms; and
j. List three sources of inheritable variation.

Major Topics to Be Included:
a. Introduction to chemistry
b. Cell morphology, physiology, and reproduction
c. Introduction to metabolism, cellular respiration, and photosynthesis
d. Genetics and the Central Dogma
e. Evolution

Effective Date of Course Content Summary: February 13, 2009