Effective Implementation date: Summer 2018, 201910

Required Syllabus Information – all must be included in the course syllabus

BIO 105
Course Title: Science of Biology with Lab:GT-SC1
Course Credits: 4
Course Description: Examines the basis of biology in the modern world and surveys the current knowledge and conceptual framework of the discipline. Explores biology as a science, a process of gaining new knowledge, and the impact of biological science on society. This course includes a laboratory experience. Designed for non-science majors.

GT Pathways Requirements:

Guaranteed Transfer (GT) Pathways Course Statement:
Guaranteed Transfer (GT) Pathways Course Statement: The Colorado Commission on Higher Education has approved BIO 202 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT- SC1 category. For transferring students, successful completion with a minimum C– grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to CDHE GT Pathways Information.

NATURAL & PHYSICAL SCIENCES (N&PS) CONTENT CRITERIA – GT-SC1

1. The lecture content of a GT Pathways science course (GT-SC1)
    a. Develop foundational knowledge in specific field(s) of science.
    b. Develop an understanding of the nature and process of science.
    c. Demonstrate the ability to use scientific methodologies.
    d. Examine quantitative approaches to study natural phenomena.

2. The laboratory (either a combined lecture and laboratory, or a separate laboratory tied to a science lecture course) content of a GT Pathways science course (GT-SC1)
    a. Perform hands-on activities with demonstration and simulation components playing a secondary role.
    b. Engage in inquiry-based activities.
    c. Demonstrate the ability to use the scientific method.
    d. Obtain and interpret data, and communicate the results of inquiry.
    e. Demonstrate proper technique and safe practices.

COMPETENCIES & STUDENT LEARNING OUTCOMES FOR GT-SC1

Inquiry & Analysis:

4. **Select or Develop a Design Process**
    a. Select or develop elements of the methodology or theoretical framework to solve problems in a given discipline.
5. **Analyze and Interpret Evidence**

a. Examine evidence to identify patterns, differences, similarities, limitations, and/or implications related to the focus.
b. Utilize multiple representations to interpret the data.

6. **Draw Conclusions**
    a. State a conclusion based on findings.

Quantitative Literacy:

1. Interpret Information
    a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information
    a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

SYSTEM REQUIREMENTS:

REQUIRED COURSE LEARNING OUTCOMES

1. Define and utilize terminology, specific facts, experimental methodologies, and general concepts related to the nature of cells and tissues, principles of inheritance, evolution and the diversity of life, relationship of structure and function, and principles of ecology at a survey level.
2. Apply the concepts learned to interpret and analyze new situations.
3. Perform proper procedures and techniques in the laboratory and utilize equipment safely.
4. Describe the impact of biological research and technology on society.
5. Employ scientific methodologies to the extent of formulating a hypothesis, determining controls in experiments, interpreting experimental data and forming conclusions.
6. Communicate scientific information clearly and logically.
7. Represent and interpret biological graphs, tables and other quantitative information.

REQUIRED TOPICAL OUTLINE

The required topical outline information MUST be included in the syllabi. It may be incorporated using one of the following variations: copying the topical outline as written below, integrating the topics within the assignment schedule, or listing the topics to be covered.

I. Introduction
    a. Nature of the scientific enterprise
    b. Science and society
II. The nature of cells and tissues
    a. Cell structure and function
    b. Energy flow and chemical reactions
    c. Cell reproduction and life cycles
    d. Levels of organization
III. Principles of Inheritance
    a. Genetic engineering
    b. Human genetics
IV. Evolution and diversity of life

a. Process and products of evolution
b. Microorganisms
c. Plants and animals
d. Human evolution

V. Principles of Ecology

Syllabi requirements, including legal compliance information must be included. Individual College syllabi guidelines may include additional information. Please contact your VPI/CAO for specific College requirements.