

Syllabus

BIOS1010 General Biology

2014

Committee Members:

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Date Reviewed: January 24, 2014

NCCA Council of Instructional Officers Chair

Chair: Deborah Brennan

Date Approved: 3/13/14

I. CATALOG DESCRIPTION

Course Title: BIOS 1010 – General Biology

Prerequisite: None

Recommendations: High school biology and meet college required assessment minimum score.

Course Description:

This course covers fundamental processes of cells and organisms, cell structure genetics, evolution, classification, diversity, and interaction of organisms at the molecular, cellular, organismic, ecosystems, and biosphere level. It is designed as both a course for non-majors and as a foundation course for those planning additional work in biology. Includes lab. (Below are listed the minimum times.)

Credit Hours: 4 semester hours or 6 quarter hours

Lecture/Classroom Hours 3 hours/week (semester)
5 hours/week (quarter)

Laboratory Hours 2 hours/week (semester)
3 hours/week (quarter)

Practicum/Clinical/Recitation Hours: 0

Cooperative Education/Internship Hours 0

II. COURSE OBJECTIVES/COMPETENCIES

A. Course will:

1. Meet the general education science requirements and transfer as a core requirement to most four year institutions.
2. Foster critical thinking skills in examining biology-related issues as they relate to societal and individual problems.
3. Relate basic biological concepts to common experience.
4. Illustrate how the process of science can be utilized as part of problem-solving strategies.
5. Introduce students to biological laboratory techniques.

III. STUDENT LEARNING OUTCOMES

- A. The student will:
1. Demonstrate and explain scientific theories and methodologies.
 2. Describe the characteristics common to living things, and the differences among organism groups in the domain/ kingdom classification system.
 3. Demonstrate a working knowledge of plant, animal and prokaryotic cell structure and function.
 4. Explain the chemical basis of life, including atomic and molecular structure, , overview of metabolic pathways, molecular basis of genetic material and protein synthesis.
 5. Describe the genetic principles of Mendelian inheritance, meiosis, mitosis, chromosome structure, mutagenesis, and concepts of modern biotechnology.
 6. Explain the interactions and adaptations of plants and animals within their respective ecosystems and biosphere.
 7. Describe the theories of biological/scientific evolution and the genetic, morphological, fossil, and historical evidence supporting these theories.

IV. COURSE CONTENT/TOPICAL OUTLINE

- A. The following may be taught in the order that the faculty member chooses.
1. Scientific Methods
 2. Cell Structure/Function
 3. Cell Chemistry/Metabolism
 4. Classical / Molecular Genetics and Biotechnology
 5. Diversity and Classification
 6. Ecology and the Environment
 7. Evolutionary Theories

V. INSTRUCTIONAL MATERIALS

- A. Textbooks – Any college-level Biology textbook selected must address the objectives listed. Instructor(s) should give priority to the following texts or the most current edition:
1. Campbell Essential Biology 5th edition Simon, Dickey, and Reece, 2013, Pearson Publishing
 2. Campbell Biology - Concepts and Connections, 7th edition, Reece, 2012, Benjamin Cummings Publishing
 3. Biology – Life on Earth, Audesirk, Audesirk, Byers, 10th edition, 2013, Benjamin Cummings Publisher
 4. Biology, Mader, 11th edition, 2013, McGraw Hill Publishing

5. Essentials of Biology, Mader and Windelspecht, 3rd edition, 2012, McGraw Hill Publishing
 6. What is Life? A Guide to Biology, Jay Phelan, 2nd edition, 2013, Freeman Publishing
 7. Concepts in Biology, 13th Edition, Enger, Ross and Bailey, McGraw-Hill Publishing
- B. Other Resources
Basic biology laboratory equipment
- C. Outside Reading/Research Required
See course outline

VI. METHOD OF PRESENTATION/INSTRUCTION

- A. Lecture
- B. Discussion
- C. Demonstration
- D. Application
- E. On-Line
- F. Distance Education

VII. METHODS OF EVALUATION

Course grades, at the determination of the instructor, will be based on participation, assignments, exams, projects, papers and/or a portfolio. Instructors will distribute and discuss evaluation and his/her grading policies with students at the beginning of each term.

VIII. SPECIFIC COURSE REQUIREMENTS

None