

COURSE PROFICIENCY OUTLINE

ADVANCED PLACEMENT BIOLOGY -360

5 Credits

Purpose

Advanced Placement Biology is a college level biology course taught in a high school setting. The student is expected to have shown excellence in previous courses in chemistry and biology. Physics is strongly recommended for any student who is seriously interested in future work in all sciences. The student will be able to receive college advanced placement upon completion of the course and recommendation from the high school, College Entrance Examination Board, and the college. Admission to this course will be in accordance with recommendations by the commission on Advanced Placement. Students electing the course are expected to take the Advanced Placement Test.

The course is a rigorous continuation and intensification of the work begun in first year biology; the chemical-molecular and cellular areas, the organismal areas, and the ecological, genetics and evolutionary areas of biology will be stressed. Laboratory work, field work and simulations, and additional readings form a vital part of the program.

I. Student Outcomes 5.1, 5.3, 5.4, 5.5

- A. Students will demonstrate an understanding of the terminology, facts, concepts and applications of the college level biology course.
- B. Students will demonstrate the ability to utilize college level biology learnings and materials in everyday life and in the further learning of science.
- C. Students will demonstrate an understanding of biology and technology and the interrelationships of humankind, resources, energy and the environment.
- D. Students will utilize already attained competencies in science critical-thinking skills, study and learning skills, reading, writing and listening skills, and laboratory manipulative and investigative skills, and further these college preparatory learning skills.

II. Content 5.1, 5.3, 5.4, 5.5, 5.10

- A. Molecular and cellular biology
 - 1 Chemical background and various biological substances; enzymes
 - 2 Cellular biology, structure and function; cell division
 - 3 Chemical nature of genes; origin of life
 - 4. Energy transformations
- B. Organismal biology
 - 1. Plants - detailed studies, structure and function
 - 1 Animals - detailed studies; vertebrate biology
 - 2 Animal reproduction and development
- 4. Principles of heredity; problem solving

ADVANCED PLACEMENT BIOLOGY -360 -2

- C. Population biology
 - 1 Ecology principles
 - 2 Biogeochemical cycles
 - 3 Principles of evolution
 - 4 Principles of behavior
 - 5 Social biology

III. Activities and Materials

- A. Texts -Biology , Campbell, Reece
- B. Classwork
 - 1. Lectures, note-taking, discussions, simulations and demonstrations, and regular tests and quizzes will be utilized.
 - 2. College level skills in reading, writing, listening, information processing and reporting, and science-learning skills will be utilized.
- C. Laboratory activities
 - 1. Advanced microscopy studies and techniques
 - 2. Studies developing scientific skills and science critical-thinking skills
 - 3. Advanced studies of biological processes and their applications
 - 4. Advanced studies in bacteriology, anatomy and physiology, and Drosophila Genetics
 - 5. Advanced studies of ecological principles and simulations and the interrelationships of organisms and their environment
- D. Assignments - to be carefully checked and reviewed by the teacher and students utilizing college level reading, writing, and science organization and thinking skills.
 - 1. Readings - texts and other sources, outlining and the organization and thinking skills
 - 2. Written answers to questions
 - 3. Laboratory and other reports utilizing varying techniques and methods
 - 4. Science study-learning assignments

- . Evaluation
- . Students will be expected to complete classwork and homework learning assignments, laboratory work and reports, and make up work missed whenever it is practical to do so.
- . Students will be expected to demonstrate a high level of proficiency in all of the goals and objectives of the course within the previously defined content and process areas.

C. The evaluation of student proficiencies shall consist of tests and quizzes, written assignments and reports, lab reports and the teacher's regular observations of the students' proficiencies, involvement and learnings in laboratory activities and in the classroom environment.

D. The final grade represents the teacher's professional judgment of the student's performance and all of the aforementioned activities and/or requirements are included in the evaluative process.

E. The C.E.E.B. Advanced Placement Biology exam shall be taken during the month of May.

g:\cpos hs\scilap biology 360 x

Revised 6/2004

Reviewed 8/2010

Reviewed 8/2011

