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COURSE SYLLABUS

COURSE: BIO 110 PRINCIPLES OF BIOLOGY

HOURS: Lecture: **3** Lab/Shop: **3** Work Exp/Clinical: **0** Credits: **4**

COURSE DESCRIPTION:

This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. Laboratory exercises are designed to illustrate the basic principles presented in lecture.
Note: In accordance with the Comprehensive Articulation Agreement, this course has been approved to satisfy the Universal General Education Transfer Component requirement for natural sciences in A.A. and A.S. degree programs. This course has been approved to meet the natural sciences requirement in A.A.S. degree programs.

PREREQUISITE(S): None

COREQUISITE(S): None

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Open Educational Resources (OER) are listed in the course Moodle.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Evaluate the validity of an experimental design based on the scientific method.
2. Explain how electrons are distributed in atoms, and how this affects the number and type of bonds that can be formed.
3. Identify the properties of water that make it vital for life.
4. Identify the four macromolecules and know their structure, function and examples.
5. Contrast the general features of eukaryotic and prokaryotic cells.
6. Understand the steps of the Central Dogma and Recognize the uses of DNA technology in modern society in areas of medicine, agriculture, manufacturing and forensics.
7. Identify the phases of the cell cycle, discuss how it is controlled.
8. Relate the stages of meiosis to their contribution to genetic diversity.
9. Construct a Punnet square to predict the probabilities of certain traits being expressed in the progeny using the principles of Mendelian inheritance.
10. Understand the mechanisms of natural selection and their impact on evolution be able to compare and contrast microevolution and macroevolution.
11. Describe basic ecosystem structure and identify the impact human activities have had on the biosphere.

*****Please refer to the online version of the Richmond Community College Program & Course Catalog and the Student Handbook for current academic and general information.**