Common Course Outline
SCIS 103
Natural Science
3 Credits
Community College of Baltimore County

Description

SCIS 103 – 3 credits – Natural Science surveys the fundamental principles in physics, chemistry, astronomy, earth sciences and biology; includes origin of the universe, formation of the earth, origin of life, evolution, advances in technology and problems confronting ecosystems.

3 Credits

Prerequisites: ACLT 052 or ACLT 053; and MATH 082

Overall Course Objectives

Upon completion of this course students will be able to:

1. use scientific terminology to describe basic physical, chemical and biological processes;
2. analyze and present data both numerically and graphically;
3. incorporate scientific information into effective written and oral communications;
4. find, evaluate, use and cite appropriate resources within the field of natural sciences;
5. apply mathematical methods to the interpretation of scientific data;
6. use scientific data and methods individually and collaboratively, to solve problems involving scientific topics;
7. explain how scientists have used results from technologies to develop theoretical models;
8. use the Internet and/or other informational resources to research scientific topics;
9. discuss how physical, chemical and biological processes affect the conditions for biological and social organization on Earth;
10. compare and contrast the backgrounds and historical contexts of scientists from a variety of cultures;
11. examine relationships among various scientific disciplines and technologies;
12. evaluate ethical issues relating to scientific and technological developments, and
13. demonstrate an appreciation of the role, importance and history of science in different cultures.

Major Topics

I. Overview of science
   - A. Scientific Method
   - B. History of Science
   - C. Role of science in the world and in diverse cultures

II. Energy
   - A. Thermodynamics
   - B. Electricity and Magnetism
   - C. Electromagnetic Radiation

III. Matter
    A. Atom
    B. Chemical Bonds
    C. Material Properties
    D. Elementary Particles
IV. Planetary Processes
    A. Geological Changes
    B. Material Cycles
V. Cosmic Processes
    A. Relativity
    B. Stellar Evolution
    C. Cosmology
VI. Ecosystems
    A. Survival Strategies
    B. Ecological Disruption
VII. Organic Processes
    A. Organic Molecules
    B. Cell
    C. Genetics
    D. Evolution

Course Requirements

Grading/Exams:

Grading procedures will be determined by individual faculty memebrs but will include the following:

- a minimum of 4 exams including written short responses
- a minimum of 1 activity requiring student collaboration
- a minimum of 2 written assignments totaling at least 3-5 pages, using MLA format

Writing:

Multiple assignments will infuse CCBC General Education Program objectives. At least one assignment worth a minimum of 5% of the total course grade will allow students to demonstrate at least five of the seven General Education Program outcomes. Students are required to use appropriate academic resources.

Other Course Information

This course is an approved 3-credit General Education course in the Biological and Physical Sciences category that **does not fulfill** the laboratory requirement. Please refer to the current CCBC Catalog for General Education course criteria and outcomes.

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