

**SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES**

Sciences

Revision Date: 07-01-22

I. CATALOG DESCRIPTION

Course Number: BIOS1030

Course Title: Environmental Science

Prerequisite(s): None

Catalog Description: Environmental Science is in essence a study of human ecology. It provides the student with an understanding of the earth's living and non-living resources and the effects that an ever-increasing human population has imposed on the planet by exploiting those resources. The course will also incorporate the role that humans play in uncovering solutions to environmental problems. This course integrates biological sciences such as biology and ecology with socio-economic fields of study such as sociology, political science, philosophy, ethics, and economics. No laboratory class is offered or required for this course.

Credit Hours: 3.0

Class Hours: 45

Lab Hours: 0

Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Recognize science as a means to inquire into the workings of the natural world.
- B. Recognize the nature of science knowledge – that theories explain observations, and that these theories represent the most logical explanations for observed phenomena based on available evidence.
- C. Recognize science as an integral component of society and as relevant to our lives.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes: *Student will be able to:*

- 1. Understand the living and non-living components of an environment.
- 2. Become familiar with major ecosystem types and biomes.
- 3. Understand basic biological and ecological processes such as photosynthesis, natural community interactions, adaptation, productivity, etc. as examples of global processes.
- 4. Understand the various biogeochemical cycles that occur within and between ecosystems.
- 5. Comprehend the sources of energy and how energy flows through ecosystems.
- 6. Understand how humans affect biogeochemical cycles and energy flow.
- 7. Understand how human populations rely on the environment.
- 8. Understand how to think critically and creatively to come up with practical solutions for how humans can maintain sustainability as the primary consumers and “caretakers” of the planet.

B. General Education Learning Outcomes

- 1. GELO #3: Critical Thinking & Problem Solving
 - Outcome: Collect, identify, interpret and analyze data.
 - Outcome: Synthesize information to arrive at reasoned solutions to problems.
 - Outcome: Evaluate ideas presented in writing, media, speech, or artistic presentations.
 - Outcome: Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
 - Outcome: Acquire and integrate knowledge and construct relationships across disciplines.

2. GELO #4: Global Awareness and Citizenship
Outcome: Discuss issues from a global perspective.
Outcome: Identify and evaluate different theoretical or philosophical perspectives and their relevance to ethical decision-making.
3. GELO #6: Career and Life Skills
Outcome: Demonstrate choices that reflect personal responsibility in one's academic, civic, social, and vocational/professional life.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

- A. Understanding our environment
- B. Biogeochemical cycles and energy flow
- C. Biological communities and ecosystems
- D. Population biology
- E. Biomes
- F. Environmental conservation
- G. Food and agriculture
- H. Environmental health and toxicology
- I. Air: Climate and pollution
- J. Water: Resources and pollution
- K. Environmental geology and Earth resources
- L. Energy
- M. Solid and hazardous waste
- N. Economics and urbanization
- O. Environmental policy and sustainability
- P. Individual Project

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 1. Cunningham and Cunningham. Principles of Environmental Science Digital Edition w/Connect and LearnSmart. 9th ed. 2020. McGraw-Hill. ISBN-13: 9781260492811. *Essential Environment: The Science behind the Stories, Plus Mastering Environmental Science with eText*. 6th ed. 2018. ISBN-13: 9780134145938.
- B. Other Resources:
 1. Journal, newspaper, and magazine articles to be provided by the instructor as needed.

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. PowerPoint lectures
 2. Occasional short videos
 3. Journal articles, newspaper articles, & magazine articles

VII. METHODS OF EVALUATION

- A. Methods of evaluation typically include a combination of the following:
 1. Exams
 2. Quizzes
 3. Homework assignments
 4. Individual presentations

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

None.