

El Camino College

COURSE OUTLINE OF RECORD - Official

I. GENERAL COURSE INFORMATION

Subject and Number: Descriptive Title:	Geology 7 Environmental Science I
Course Disciplines:	Earth Science
Division:	Natural Sciences
Catalog Description:	This course is a multidisciplinary introduction to environmental and natural resource issues, with an emphasis on how they can be understood in terms of physics, chemistry, and biology. This course examines human population growth through history, resources, pollution, and sustainability, and relates them to how humans use and affect the hydrosphere, atmosphere, lithosphere, and biosphere.

Conditions of Enrollment: Recommended Preparation

English 84

Course Length: Hours Lecture: Hours Laboratory: Course Units:	X Full Term Other (Specify r 3.00 hours per week TBA 0 hours per week TBA 3.00	number of weeks):	
Grading Method: Credit Status	Letter Associate Degree Credit		
Transfer CSU: Transfer UC:	 X Effective Date: Proposed X Effective Date: Proposed 		
General Education:			
El Camino College:	1 – Natural Sciences		
	Term:	Other:	
CSU GE:	B1 - Physical Science		
	Term:	Other:	
IGETC:	5A - Physical Science without Lab		
	Term:	Other:	
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A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

Students can identify the salient features of the basic concepts of

- 1. environmental science. (This includes the ability to recall the definitions of the specialized vocabulary of environmental science.)
- 2. Students recognize and articulate how their environment affects their lives and how their lives affect their environment.
 - Students can identify the key elements of the scientific method (hypotheses,
- 3. test, observations, conclusions) in popular accounts of scientific research in magazines, newspapers, etc.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at http://www.elcamino.edu/academics/slo/.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Define and discuss basic scientific concepts as they relate to environmental systems.

Essay exams

2. Explain the physical and biological processes which govern the environment.

Essay exams

3. Identify the relationships between the biosphere and its physical environment.

Homework Problems

4. Compare and contrast the organization of organisms between populations and describe community changes through ecological succession.

Quizzes

5. Describe the natural selection process and its influence on evolution and speciation.

Objective Exams

6. Relate human population dynamics to environmental sustainability and degradation.

Essay exams

7. Describe available water, soil, mineral, and food resources to analyze issues of ethics and personal responsibility relating to the environment.

Homework Problems

8. Compare resource use between Industrial and pre-industrial countries and discuss conservation and management strategies.

Reading reports

9. Explain global warming, acid deposition, loss of ozone layer, and identify causes of each.

Objective Exams

10. Identify pollution sources and their impact on resources and the environment.

Essay exams

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topic
Lecture	3	I	Introduction A. The interdisciplinary nature of environmental sciences
			B. History of environmental sciences
			C. Environmental challenges
Lecture	6	II	Environmental Systems
			A. Energy
			B. Chemistry
			C. Biochemical Cycles
Lecture	4.5	111	Evolution, Species Interactions, and Biological Communities
			A. Diversity
			B. Species interactions
			C. Population growth.
			D. Communities
Lecture	3	IV	Human Populations
			A. Growth
			B. Factors
Lecture	4.5	V	Biomes and Diversity
			A. Terrestrial, marine, and freshwater ecosystems
			B. Benefits, threats, and protection
Lecture	6	VI	Environmental Conservation
			A. Forests
			B. Grasslands
			C. Parks and nature preserves
Lecture	4.5	VII	Food, Soil, and Agriculture
			A. Global trends in food production
			B. Soil as a resource
			C. Soil management and degradation
			D. Sustainable farming
Lecture	6	VIII	Geology and Earth Resources
			A. Processes

			B. Rocks and minerals
			C. Geologic resources and conservation
			D. Hazards
Lecture	6	IX	Climate
			A. Atmosphere
			B. Weather and climate
			C. Fossil fuel
			D. Climate change
Lecture	4.5	Х	Air Pollution
			A. Sources
			B. Effects
			C. Management
Lecture	6	XI	Water Resources and Pollution
			A. Compartments
			B. Availability and shortages
			C. Pollution in quality
			D. Management and conservation
Tot	al Lecture Hours	54	
Total L	aboratory Hours	0	
	Total Hours	54	

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Substantial writing assignments

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

How do liquid pollutants enter the water table? How do we remove them? Answer in several paragraphs and include diagrams.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

- Explain one positive feedback loop (vicious cycle) that occurs as the earth warms up. In other words, explain why the warming earth causes events that result in even more warming. The answer should be at least three paragraphs long and include one diagram.
- 2. Compare and contrast ozone with atmospheric nitrogen/sulfur compounds in the Los Angeles Basin. As part of your answer, describe how each type of pollution

occurs, explain how it harms human health, and describe progress to reduce the pollution. The answer should be at least one paragraph long and include a diagram.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Essay exams

Objective Exams

Quizzes

Reading reports

Written homework

Homework Problems

Term or other papers

Multiple Choice

Matching Items

True/False

Presentation

V. INSTRUCTIONAL METHODS

Demonstration Discussion Group Activities Internet Presentation/Resources Lecture Multimedia presentations

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study Answer questions Required reading Written work

Estimated Independent Study Hours per Week: 6

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Wright and Boorse. Environmental Science: Toward a Sustainable Future. 13th ed. Pearson, 2016.

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

News articles pertaining to current environmental issues.

D. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

Requisites (Course and Non-Course Prerequisites and Corequisites) Α.

Requisites	Category and Justification	
B. Requisite Skil	ls	
Requisite Skills		

С. **Recommended Preparations (Course and Non-Course)**

Recommended Preparation	Category and Justification
Course Recommended Preparation English-84	

D. **Recommended Skills**

Recommended Skills
Students in this course are required to use critical thinking skills to read college-level textbooks. The skills developed in English 84 will increase their ability to complete these assignments and will greatly enhance their chances for success in this course. ENGL 84 - Select and employ reading strategies to interpret the content of a college-level textbook, with special focus on constructing a thesis statement and providing valid support.

Ε. **Enrollment Limitations**

	Enrollment Limitations and Category	Enrollment Limitations Impact
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Course created by Joseph Holliday on 02/14/2016.

BOARD APPROVAL DATE: 12/18/2017

LAST BOARD APPROVAL DATE:

Last Reviewed and/or Revised by Thomas Noyes on 02/18/2016

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