

Curriculum and Instruction

9-12 COURSE OF STUDY OUTLINE

Title of Course of Study **Honors Environmental Science**
Course Number: _____ *(Assigned by Curriculum Department)*

9-12 Course of Study Adoption Process

PROCEDURES:	
1	Writing of Course of Study
2	Review with Principal
3	Site Department Chairs – Review/Sign
4	Administrative Director, Curriculum & Instruction - Review/Sign
5	Assistant Superintendent, Secondary Education - Review/Sign
6	Curriculum Council Recommends
7	Board of Education Approves

Note: Please complete all sections. Enter “none” or “n/a” as appropriate.

I. Course Title: Honors Environmental Science

II. Department/Subject Area:

- ALG - Algebra
- DRV - Driver Education
- ECO - Economics
- ELC - Electives
- F/G Family Living/World Geography
- FAL - Fine Arts/Performing Arts/Foreign Language
- GOV - Government
- HLT - Health Safety
- LIF - Life Science
- Math - Mathematics
- PE - Physical Education
- PHY - Physical Science
- USH - US History
- WH - World History

III. Length of Course: 1 year _____ Credit Value: 10 _____

- Meets high school graduation requirement credits
- Elective course credit
- No credit

IV. Grade:

- 9th
- 10th
- 11th
- 12th

V. Course Level: Pre-AP AP Honors

VI. Is this an Internet-based course? Yes No

If so, who is the course provider?

VII. UC/CSU Approved Course: Yes No * pending
Is this course modeled after a UC-approved course from another district?
 Yes No If so, which school/district? _____

UC/CSU Language (if applicable): n/a

Course Section Program: n/a

VIII. Recommended pathway:

Before taking the course, students should have successfully completed two years of high school science: 1 year of Life Science and 1 year of Physical Science.

The recommended pathway for this course is:

- First Year: CP Conceptual Physics
- Second Year: CP Biology
- Third Year: CP Chemistry
- Fourth Year: Honors Environmental Science

IX. Brief course description:

The following themes provide a foundation for the structure of the Environmental Science course, which is adopted from the AP Environmental Science program:

- a. Science is a process.
 - Science is a method of learning more about the world.
 - Science constantly changes the way we understand the world.
- b. Energy Conservations underlie all ecological processes.
 - Energy cannot be created, it must come from somewhere.

As energy flows through systems, at each step more of it becomes unusable.

- c. The Earth itself is one interconnected system.
Natural systems change over time and space.
Biogeochemical systems vary in ability to recover from disturbances.
- d. Environmental problems have a cultural and social context.
Understanding the role of cultural, social, and economic factors is vital to the development of solutions.
- e. Human survival depends on developing practices that will achieve sustainable systems.

X. Course goals and/or major student outcomes as aligned to Standards:
(List standard numbers that are addressed in the course)

The Environmental Science course will be offered as a laboratory science class to students who are willing to take the opportunity to study a subject in a challenging, and meaningful way.

Because of the analytical component the course demands, students should have taken at least 1 year of Algebra. These prerequisites usually mean that students take the course in their junior or senior year.

Because of the large amount of material that must be mastered by the end of the year, students may be responsible during school breaks for mastering some topics not covered in class. Also, it may be necessary for students to come after school to complete some of the required materials. There are many topics to be studied this year and each unit has an exam to be taken, lab activities to be conducted, and reading assignments to be completed, and a major project to be finalized at the end of each semester.

XI. Course objectives:

This course is designed to be the equivalent of a one-semester, laboratory college course in Environmental Science. It provides students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world. Students will identify and analyze environmental problems both natural and human-made. Students will evaluate the relative risks associated with these problems, and examine alternative solutions for resolving and/or preventing them.

XII. Course outline: (Please use the following format; no bullets, please)

- A. Introduction to Environmental Science
 - 1. Theory, philosophy, rhetoric, and terminology
 - a. The importance of scientific method
 - b. Gathering, organizing, and conducting experiments will be reviewed.
- B. Life on Earth
 - 1. Fundamental underpinnings of Environmental Science
 - a. Basic ecology and the study of populations
- C. Population Dynamics, Human Population, Growth, and Demography
 - 1. Basic needs of human beings
 - a. Needs met vs. not met and attempt to meet all needs
 - b. Agriculture: history, crop production, green revolution

- D. Planet Earth's Hydrosphere and Atmosphere
 - 1. Water
 - a. Resources and management
 - b. Stewardship and pollution
 - 2. Air
 - a. Weather, climate, and pollution
- E. Non-Renewable and Renewable Resources
 - 1. Fossil fuel reserves vs. other energy sources
 - a. Advantages/disadvantages: Alt. energy
- F. Environmental Issues and Policies
 - 1. Human impact on the environment
 - a. Cultural, social, and economic factors
 - b. Development of plausible solutions to environmental problems

XIII. Texts and Supplemental Instructional materials:

(Primary, Supplemental, newspapers, magazines, and software.)
Please supply ISBN #'s for all texts.

Title: Environmental Science: A Global Concern (10th ed.)

Author: Wm. Cunningham and Mary Ann Cunningham

Publisher: McGraw Hill Higher Educ. _____

Date of Publication: 2008 ISBN # : 978-0-07-722636-7

Board Approval Date: May 6, 2008

XIV. Key Assignments:

Environmental Stewardship:

Throughout the year, all students are required to participate in community service activities in order to earn a total of six hours per semester. Listed below are the activities students are required to participate.

Native Plant Garden at Oak Grove Regional Park:

The class will engage students in a year-long project that involves habitat development, restoration, and conservation of California native plants at Oak Grove Regional Park's Nature Center's (OGNC) garden. This project will enhance their classroom learning, develop leadership skills, and will make a difference in our neighborhood park. The fieldwork might include the development of a plan and design of the garden, planting of native vegetation, and the removal of invasive, non-native species. This experience will further serve to introduce students to possible careers in agriculture, education, and natural resource conservation, while developing their connections to the natural world.

Students are required to put in a certain number of hours per quarter, which are as follows:

First Semester	1st Quarter: 2 hrs	2nd Quarter: 2 hrs
Second Semester	3rd Quarter: 2 hrs	4th Quarter: 2 hrs

A presentation will be given by Mr. James Rexroth of OGNC which will give students a more detailed information about the project.

Fall Semester: California Coastal Clean-Up

Bear Creek students, for the last fifteen years, have participated and are required to put in additional two hours of community service in this state-wide coastal, watershed, river ways clean-up. Bear Creek High School has adopted Mosher Slough along Sandman Park in Stockton, as their work site. The CC Clean-Up will take place every third Saturday of September.

Spring Semester: Earth Day Celebration at Victory Park

Bear Creek students are also required to put in additional two hours of community outreach/education during this celebration. We will take time in class to prepare activities well suited for elementary school students. These activities will serve to educate the community kids scientific and environmental concepts and issues Environmental Science students have learned from this class. Earth Day celebration is the third weekend of April every year.

XV. Instructional methods and/or strategies:

1. Lecture Presentations (Instructor/Students)
2. Laboratory Activities
3. Community Project/Services
4. Research/Presentation Project (Individual/Group)

XVI. Assessment methods and/or tools:

In addition to tests and research, the laboratory component will complement the classroom instruction by allowing students to learn Environmental Science concepts through experimental observation. Experiences gain from doing community service projects provide students with the opportunities to relearn and apply their knowledge through public education.

Grades will be determined every quarter by the total number of points earned from the following categories:

- a. Unit Exams (Multiple Choice Questions, Short Answer, Short Essay)
- b. Lab Reports
- c. Summaries/Chapter Reading Assignments
- d. Summaries/Scientific Films
- e. Research/Presentation
- f. Community Service Hours

XVII. Context for Course: (optional)

This course is being developed for Bear Creek's Green Technology Academy. UC approval of this course is also being pursued.

XVIII. History of Course Development: (optional) n/a

The information below is required by Technology Services to enter the course title and number in the system. Consult your site Registrar for help in completing this section, if necessary.

Issue Marks: (Check all that apply)

Quarter Mark Report Semester Mark Report

<u>Include in Honor Roll:</u>	<u>Weighted</u>	<u>Unweighted</u>
<input type="checkbox"/> Principal's HR	X	
<input type="checkbox"/> Honor Roll	X	
<input type="checkbox"/> Report Card	X	

<u>Include in GPA</u>	<u>Weighted</u>	<u>Unweighted</u>
<input type="checkbox"/> Academic GPA	X	
<input type="checkbox"/> CAL Grant	X	
<input type="checkbox"/> Weighted Total GPA	X	
<input type="checkbox"/> Unweighted Total GPA	X	
<input type="checkbox"/> Weighted Qtr GPA	X	

Include in Extract: Yes No

State Course Code: _____

NCES Course Classification (if applicable): n/a _____

Course Type: Honors _____

NCLB Course: n/a _____



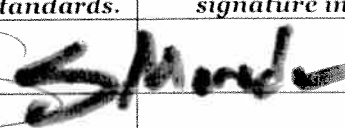
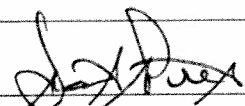
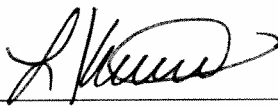
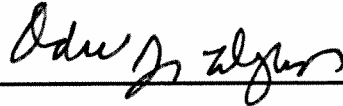
CTE Technical Preparation: (check for Yes)

Education Service: n/a _____

Independent Study Indicator: (check for Yes)

Distance Learning: (check for Yes)

Education Program Funding: CPA Green Grant _____

REVIEW		
Outline prepared by	Turila Cancilla / ^{Isabel} Cuervo	Site: BCHS
Principal		Site:
Teacher Representative:	<i>Signature indicates course is aligned to content standards.</i>	<i>** Please state reason for no signature in the space below.</i>
Bear Creek High School	 	
Lodi High School		
McNair High School		
Tokay High School		
Liberty High School (if applicable)		
Plaza Robles High School (if applicable)		
Independence High School (if applicable)		
Administrative Director, Curriculum & Instruction		
Assistant Superintendent, Secondary Education	 1/17/2012	

DATE	
	Date sent and/or presented to principals for review
	Course Outline Submitted
1-19-12	Curriculum Council Recommendation for Approval
	Board of Education Approval

Browse 500 sets of environmental science apes global concern flashcards. Study sets Diagrams Classes Users. Advanced. 13 terms. CVHaldorsen. environmental science a global concern Ch 3. First Law of Thermodynamics. Second Law of Thermodynamics. Environmental Science: A Global Concern Chapter 1. Environment. Environmental science. Environmental Science by Cunningham et al has a unique balance between science and issues. Armed with knowledge of the science of the environment, students and instructors are able to better understand the policies that come out of scientific knowledge (or in some cases, the science that grows out of the policies). This is the most truly balanced book on the market in Canada. A contributing editor was brought in on this project (Dan Shrubsole, UWO) to team up with the Canadian author (Robert Bailey, UWO) for a truly Canadian section on policy and law. These chapters, while remaining global in Environmental Science: A Global Concern, Twelfth Edition, is a comprehensive presentation of environmental science for non-science majors which emphasizes critical thinking, environmental responsibility, and global awareness. This book is intended for use in a one or two-semester course in environmental science, human ecology, or environmental studies at the college or advanced placement high school level. Cunningham and Cunningham have updated much of the data in the 12th edition; updated data on hunger and obesity, waste production, CO2 emissions, and the effects of the 2010 oil spill are ju