San Bernardino Valley College
Curriculum Approved: October 11, 2004

I. COURSE INFORMATION:

A. Division: Science
Department: Biology
Course ID: BIOL 123
Course Title: Ecology and Environment
Units: 3
Lecture: 3 Hours
Laboratory: None
Prerequisite: None
Corequisite: None
Dept. Advisory: None

B. Catalog Description: Study of the basic concepts of ecology including the physical environment, ecosystems, energy production and transfer, and the impact of humans on ecosystems. Environmental considerations include renewable and non-renewable energy, food resources, pest control, waste management, maintenance of air and water quality, sustaining the biodiversity of ecosystems, global climate, and political and economic considerations.

C. Schedule Description: Study of the basic concepts of ecology including the physical environment, ecosystems, energy production and transfer, and the impact of humans on ecosystems.

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES:

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

A. Understand how human impacts on earth have changed through history and why environmental concerns have recently become so prominent.
B. Recognize the major environmental challenges facing modern societies and understand the choices and trade-offs these challenges pose.
C. Grasp the scientific principles underlying basic phenomena of environmental change.
D. Understand the technologies associated with major environmental problems and the technologies that may help solve these problems.
E. Distinguish the environmental impacts of industrial and developing societies, and understand why different types of societies perceive different problems and pursue different solutions.
F. Understand how the issues discussed in the telecourse are connected to the decisions and choices you make in your personal life.

IV. COURSE CONTENT:

A. Environmental problems, causes and sustainability.
B. Environmental economics and politics.
C. Matter and energy: forms, structure and quality.
D. Ecosystems and how they work.
E. Biodiversity and community processes.
F. Climate and weather.
G. Population dynamics, carrying capacity.
H. Risk, toxicology, and human health.
I. Human population: growth and distribution.
J. Air and air pollution.
K. Global warming and ozone loss.
L. Water resources and water pollution.
M. Mineral and Soil resources.
N. Solid and hazardous waste.

O. Food resources.
P. Pesticides and pest control.
Q. Rangelands, forests, and wilderness.
R. Sustaining wild species.
S. Nonrenewable energy resources.
T. Energy efficiency and renewable energy

V. METHODS OF INSTRUCTION: (Please check all that apply and add any additional not listed.)

_____ Lecture
x Class and/or small group discussion
x Critical evaluation of texts, newspapers, journal articles, and other printed research
x Critical evaluation of films, videotapes, audiotapes, or other media forms
_____ Classroom demonstrations
_____ Field trips
_____ Guest speakers
x Other: Broadcast audio-visual presentations
_____ Other: Group reviews
_____ Other: Reading of environmental literature

VI. TYPICAL OUT-OF-CLASS ASSIGNMENTS:

A. Reading Assignment. Reading assignments are required and may include (but are not limited to) the following: Read Chapter 16 prior to viewing the video tape.
B. Writing Assignment. Writing assignments are required and may include (but are not limited to) the following: Environmental Research Reports. Research an environmental topic of your choice. Find 5 literary or media resources and report on the current state of our knowledge and application of knowledge to an environmental problem.
C. Critical Thinking Assignment. Critical thinking assignments are required and may include (but are not limited to) the following: Preparation for critical thinking questions on exams. Write one paragraph responses to the critical thinking questions at the end of chapter 12.

VII. EVALUATION:

A student's grade will be based on multiple measures of performance and will reflect the objectives explained above. A final grade of "C" or better should indicate that the student has the ability to successfully apply the principles and techniques taught in this course. These evaluation methods may include, but are not limited to, the following (Please check all that apply, and add additional ones not listed):

_____ Portfolios
_____ Projects
X Written papers or reports
_____ Presentations (oral and visual)
_____ Work performance (internships or field work)
_____ Lab work
X Comprehensive examinations (cumulative finals or certifications)
_____ Peer evaluation
_____ Self evaluation
X Classroom participation
X Homework
_____ Other:
_____ Other:
_____ Other:

VIII. TYPICAL TEXT(S):

A. Environmental Science: A Global Concern, Cunningham and Saigo, McGraw-Hill 8th ed., 2005.
B. Environmental Science, Enger McGraw-Hill 9th ed. 2004

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: None