Butler Community College
Behavioral Science, Math, Science, and
Physical Education Division

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COURSE OUTLINE
Environmental Issues

Course Description
EV 150 Environmental Issues. 3 hours credit. This course will enable the student to understand basic ecological principles and apply these to relevant situations in daily life. Ecological principles include: basic ecology, populations, air and water pollution, solid and hazardous waste, toxicology, human health, energy, sustainability, and environmental solutions. This is a non-lab introductory environmental science course.

Course Relevance
Understanding basic environmental principles is needed to develop the knowledge necessary to critically evaluate environmental issues that face our planet Earth today. Understanding environmental principles can help us become better-informed citizens and allow us to make rational decisions and choices for the future of our planet. Our decisions, both personal and governmental, will determine the future of planet Earth for the next several decades. Today, human activities have global impacts. The environmental decisions we make today as individuals, societies, and world governments will determine how environmental issues worldwide will be faced and solved. The future of our home, planet Earth, is up to each one of us.

Required Materials
Miller, G.T. (2006). *Environmental science: working with the earth* (12th ed.). Brooks/Cole, a part of the Thomson Corporation, Thomson Higher Education, Belmont, CA

Course Study Guide (From Instructor)

Supplemental materials
Assigned web sites
Assigned readings

Learning Outcomes
The intention is for the students to be able to:
1. Apply basic ecological principles to relevant situations in daily life.

Primary Learning PACT Skills that will be DEVELOPED and/or documented in this course
Through the student's involvement in this course, he/she will develop his/her ability in the following primary PACT skill areas:
1. Writing
   - Through the completion of the written paper analysis of the student's chosen project topic

2. Speaking
    - Through the production of an oral presentation covering the student's chosen project topic

Secondary skills (developed but not documented):

Computer Literacy
Internet Use
Time Management
Teamwork
Valuing Diversity
Effective Citizenship
Ethical Conduct
Field Related Technology

Major Summative Assessment Task(s)

These learning outcomes and the primary Learning PACT skills will be demonstrated by

1. Preparation of an environmental project written paper covering the research of a current major environmental issue
2. Preparation of an environmental oral presentation summary of the research information covering a current major environmental issue
3. Explaining a current environmental topic in the news and relating that issue to personal actions for a healthy earth

Course Content

I. Themes – Key recurring concepts that run throughout this course:
    A. Ecology
    B. Sustainability
    C. Biodiversity
    D. Resources
    E. Environmental Quality
II. Issues – Key areas of conflict that must be understood in order to achieve the intended outcome:
    A. Living and non-living interactions
    B. Providing for future generations
    C. The universe is connected (living and non-living components)
    D. Renewable and nonrenewable resources
    E. Human health and toxicology
III. Concepts – Key concepts that must be understood to address the issues:
    A. Ecosystems
    B. Environmental awareness
    C. Species
    D. Energy flow
    E. Pollution

IV. Skills/Competencies – Actions that are essential to achieve the course outcomes:
    A. Heighten individual awareness of the living world

B. Implement actions that would help to make our world a “Greener” place to live, today and in the future
C. Explain the fundamentals of ecology and understand ecosystems
D. Examine the aspects of populations
E. Examine the pollutants of air and water
F. Examine the pollution associated with waste and biological hazards
G. Survey the human use of energy resources, usage, and supplies
H. Pursue sustainable development for individuals and nations
I. Explore Earth’s environmental and economic solutions for the future

Learning Units

I. Ecology and ecosystems
   A. Producers, consumers, and decomposers
   B. Energy flow and cycling of matter
   C. Biogeochemical cycles
   D. Photosynthesis
   E. Earth’s climate
   F. Terrestrial ecosystems
   G. Aquatic ecosystems
   H. Temperature and precipitation
   I. Community structure
   J. Species interactions
   K. Species diversity

II. Examine the aspects of populations
   A. Population growth
   B. Biological communities
   C. Populations and environmental stress
   D. Predators
   E. Reproductive patterns and survivorship curves
   F. Conservation biology
   G. Impacts of human activities
   H. Sustainable nature
   I. Population size
   J. Population age structures
   K. Human populations
   L. Urbanization

III. Examine the pollutants of air and water
   A. Outdoor air pollutants
   B. Smog
   C. Acid deposition
   D. Solutions for air pollution
   E. Greenhouse effect and global warming

F. Warmer world
G. Ozone depletion
H. Water properties
I. Water resources
J. Freshwater
K. Flooding
L. Point and non-point sources
M. Oceans

IV. Examine the pollution associated with waste and biological hazards
A. Solid and hazardous waste
B. Reduce, reuse, and recycle
C. Recycling: primary and secondary
D. Recycling of aluminum, wastepaper, and plastics
E. Options for disposal
F. Government regulation
G. Risk management
H. Determining criteria
I. Toxic and hazardous chemicals
J. Biological hazards, diseases of the world

V. Survey the human use of energy resources, usage, and supplies
A. Usage and alternatives
B. Oil
C. Natural gas
D. Coal
E. Nuclear power
F. Energy efficiency
G. Alternative energy sources
H. Sustainable energy

VI. Pursue sustainable development for individuals and nations
A. World food production
B. Environmental effects of food production
C. World crop production
D. More meat
E. More fish
F. Pesticides and pest control
G. Sustainable agriculture
H. Biodiversity
I. Land use
J. Forests
K. National parks and nature reserves
L. Aquatic systems

M. Species extinction
N. Habitat loss and degradation
O. Nonnative species
P. Hunting and poaching
Q. Pollution
R. Wild species

VII. Explore Earth's environmental and economic future
A. Environment, ecology, and environmental science
B. Growth, development, and globalization
C. Categories of resources
D. Environmental and resource problems
E. Cultural changes and sustainability
F. Economic systems and environmental problems
G. Economic growth and development
H. Environmentally sustainable economics
I. Environmental policy
J. Environmental groups
K. Environmental worldviews
L. Living sustainably

Learning Activities
Learning activities will be geared toward achieving the intended course outcomes through lecture, textbook reading assignments, audio-visual aids, class discussions, class activities, study guide chapter outlines, study guide unit quizzes, unit web activities, news articles, written projects, oral projects, and unit exams.

Grade Determination
The student will be graded on completion of assessment tasks, participation, discussion, and the final project.