West Linn–Wilsonville School District

Science Department – Course Statement

Course Title: Advanced Placement (AP) Environmental Science

Length of Course: Year
Number of Credits: 2
Grade Level: 11, 12
Prerequisites: Biology, Chemistry, and consent of instructor based on application
CIM Work Samples Offered in Course: Science work sample offered

Date of Description/Revision: January 2006

Course Overview

This course is designed to be the equivalent of a one-term, introductory college course in environmental science. It is intended to enable students to undertake, as first-year college students, a more advanced study of topics in environmental science and public policy. The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. Considerable emphasis is placed on field investigations as well as on laboratory study. Students will practice techniques for ecosystem monitoring both in the local environment and in a more pristine watershed. Students ***are required*** to take the AP Exam upon completion of the course.

Essential Questions

Concepts providing focus for student learning

- What are the major environmental issues currently facing us, and how did they arise?
- What are the ecological principles that govern life on earth?
- How does science approach solutions to environmental problems?
- What factors and societal decisions lead to sustainability or unsustainability?
- How can ecological monitoring teach us about the state of the environment and guide restoration efforts?

Proficiency Statements

Upon completion of course, students will be able to:

- Observe and identify local flora and fauna
- Using data from observations, make inferences about current health status of ecosystems
- Practice skills and techniques of ecological monitoring and restoration
- Understand flow of energy, cycling of nutrients, and disruption of these processes in ecosystems
- Analyze scientific, economic, and political information and use it to deliberate options for sustainability (engage in collaborative decision-making)

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General Course Topics/Units & Timeframes	

Semester 1

A. State of the World
B. Environmental History and Politics
C. Environmental problems and scientific principles
D. Ecological Principles
E. Field work: monitoring and restoration (ongoing)

Semester 2

F. Environmental Quality and pollution
G. Land use, biodiversity, and conservation
H. Environment and Society
I. Field work: monitoring and restoration (ongoing)

Resources	

- Text: Miller, *Living in the Environment*, thirteenth edition, Brooks/Cole, 2004