

Course Objectives/Course Outline

Spokane Community College

Course Title: Environmental Science
Prefix and Course Number: ENVS& 101

Learning/Performance Expectations:

By the end of this course, students will be able to:

- Understand the function of and interactions between the five spheres of earth that comprise our environment.
- Be proficient with the use of maps to orient and inform including knowledge of Geographic Information Systems (GIS) and Google Earth applications.
- Make fundamental and repeatable observations of the environment using a variety of technical tools and collect detailed scientific observations with rigorous documentation in a field notes journal.
- Use critical thinking skills to pose environmental questions and propose plausible solutions
- Learn about past and present management practices of the earth's natural resources and connection to societies locally, regionally, nationally, and globally
- Define and analyze the scientific foundations that apply to environmental management issues and potential solutions,
- Be practiced at discerning credible information about environmental sciences from varying sources, and
- Prepare written scientific summary reports following accepted scientific standards

Course Outline:

- I. Introduction to Environmental Science
 - A. Scientific method
 - B. Field observations and notes
- II. Interaction of Earth spheres
 - A. Lithosphere
 - B. Biosphere
 - C. Hydrosphere
 - D. Cryosphere
 - E. Atmosphere
- III. Lithosphere - Geology
 - A. The rock cycle & plate tectonics
 - B. Geomorphology
 - C. Connection with all other spheres
 - D. Environmental Science applications
- IV. Lithosphere - Soils
 - A. Soil characteristics and development
 - B. Soil mapping
 - C. Connection with all other spheres
 - D. Environmental Science applications
- V. Hydrosphere - Oceans
 - A. World oceans and water quality

- B. Scientific monitoring – including real time ocean buoy networks
- C. Connection with all other spheres - emphasis on the atmosphere & climate
- D. Environmental Science applications
- VI. Hydrosphere – surface and groundwater
 - A. Rivers, streams, and lakes
 - B. Watersheds and scientific monitoring – including real time data collection
 - C. Groundwater
 - D. Connection with all other spheres
 - E. Environmental Science applications
- VII. Biosphere – plants
 - A. Introduction to plants
 - B. Photosynthesis
 - C. Connection with all other spheres
 - D. Environmental Science applications
- VIII. Biosphere – fish and wildlife
 - A. Biodiversity
 - B. Endangered species
 - C. Scientific monitoring
 - D. Connection with all other spheres
 - E. Environmental Science applications
- IX. Atmosphere
 - A. Composition and structure
 - B. Climate
 - C. Biomes
 - D. Connection with all other spheres
 - E. Environmental Science applications
- X. Cryosphere
 - A. Ice caps and glaciers
 - B. Scientific monitoring – emphasis on ice core data
 - C. Connection with all other spheres
 - D. Environmental Science applications
- XI. Remote Sensing
 - A. Introduction to Earth observations to gather data and information
 - B. Connection to all spheres
 - C. Environmental Science applications