<http://www.enviroliteracy.org/article.php/1492.html>

# AP Environmental Science Course Outline (2006)

**I. EARTH SYSTEMS AND RESOURCES** (10-15%)

**A. Earth Science Concepts**
(Geologic time scale; [plate tectonics](http://www.enviroliteracy.org/subcategory.php/200.html), earthquakes, volcanism; [seasons](http://www.enviroliteracy.org/article.php/691.html); [solar intensity and latitude](http://www.enviroliteracy.org/article.php/680.html))

**B.** [**The Atmosphere**](http://www.enviroliteracy.org/category.php/1.html)
(Composition; structure; weather and climate; atmospheric circulation and the Coriolis Effect; atmosphere- ocean interactions; ENSO)

**C.** [**Global Water Resources and Use**](http://www.enviroliteracy.org/category.php/14.html)
(Freshwater/saltwater; ocean circulation; agricultural, industrial, and domestic use; surface and groundwater issues; global problems; conservation)

**D.** [**Soil and Soil Dynamics**](http://www.enviroliteracy.org/subcategory.php/36.html)
(Rock cycle; formation; composition; physical and chemical properties; main soil types; erosion and other soil problems; soil conservation)

**II. THE LIVING WORLD** (10-15%)

**A.** [**Ecosystem Structure**](http://www.enviroliteracy.org/category.php/3.html)
(Biological populations and communities; ecological niches; interactions among species; keystone species; species diversity and edge effects; major terrestrial and aquatic biomes[)](http://www.enviroliteracy.org/subcategory.php/294.html)

**B. Energy Flow**
([Photosynthesis](http://enviroliteracy.org/article.php/478.html) and [cellular respiration](http://www.enviroliteracy.org/article.php/1008.html); food webs and trophic levels; ecological pyramids)

**C.** [**Ecosystem Diversity**](http://www.enviroliteracy.org/category.php/3.html)
(Biodiversity; natural selection; evolution; ecosystem succession)

**D.** [**Natural Ecosystem Change**](http://www.enviroliteracy.org/category.php/3.html)
([Climate shifts](http://enviroliteracy.org/article.php/1146.php); species movement; ecological succession)

**E.** [**Natural Biogeochemical Cycles**](http://enviroliteracy.org/subcategory.php/198.html)
(Carbon, nitrogen, phosphorous, sulfur, water, conservation of matter)

**III. POPULATION** (10-15%)

**A.** [**Population Biology Concepts**](http://www.enviroliteracy.org/subcategory.php/107.html)
(Population ecology; carrying capacity; reproductive strategies; survivorship)

**B.** [**Human Population**](http://www.enviroliteracy.org/subcategory.php/30.html)1. [Human Population Dynamics](http://www.enviroliteracy.org/article.php/1365.html)(Historical population sizes; distribution; fertility rates; growth rates and doubling times; demographic transition; age-structure diagrams)
2. Population Size
([Strategies for sustainability](http://enviroliteracy.org/article.php/269.html); case studies; national policies)
3. [Impacts of Population Growth](http://www.enviroliteracy.org/article.php/1362.html)
(Hunger; disease; economic effects; resource use; habitat destruction)

**IV. LAND AND WATER USE** (10-15%)

**A.** [**Agriculture**](http://www.enviroliteracy.org/category.php/6.html)
1. Feeding a growing population
(Human nutritional requirements; types of agriculture; Green Revolution; genetic engineering and crop production; deforestation; irrigation; sustainable agriculture)
2. Controlling pests
(types of pesticides; costs and benefits of pesticide use; integrated pest management; relevant laws)

**B.** [**Forestry**](http://enviroliteracy.org/subcategory.php/20.html)
(Tree plantations; old growth forests; forest fires; forest management; national forests)

**C.** [**Rangelands**](http://enviroliteracy.org/subcategory.php/219.html)
(Overgrazing; deforestation; desertification; rangeland management; federal rangelands)

**D.** [**Other Land Use**](http://enviroliteracy.org/category.php/2.html)1. [Urban Land Development](http://enviroliteracy.org/subcategory.php/318.html)
(Planned Development; suburban sprawl; urbanization)
2. [Transportation Infrastructure](http://enviroliteracy.org/subcategory.php/106.html)
(Federal highway system; canals and channels; road less areas; ecosystem impacts)

**E.** [**Mining**](http://enviroliteracy.org/subcategory.php/27.html)(Mineral formation; extractional; global reserves; relevant laws and treaties)

**F.** [**Fishing**](http://enviroliteracy.org/subcategory.php/218.html)
(Fishing techniques; over fishing; aquaculture; relevant laws and treaties)

**G.** [**Global Economics**](http://enviroliteracy.org/subcategory.php/12.html)
(Globalization; World Bank; Tragedy of the Commons; relevant laws and treaties)

**V. ENERGY RESOURCES AND CONSUMPTION** (10-15%)

**A.** [**Energy Concepts**](http://enviroliteracy.org/category.php/4.html)(Energy forms; power; units; conversions; Laws of Thermodynamics)

**B.** [**Energy Consumption**](http://www.enviroliteracy.org/category.php/4.html)
1. History (Industrial Revolution)
2. Present Global energy use
3. Future energy needs

**C.** [**Fossil Fuel Resources and Use**](http://enviroliteracy.org/subcategory.php/21.html)(Formation of coal, oil and natural gas; extraction/purification methods; world reserves and global demands; synfuels; environmental advantages/ disadvantages of sources)

**D.** [**Nuclear Energy**](http://enviroliteracy.org/subcategory.php/28.html)
(Nuclear fission processes; nuclear fuel; electricity production; nuclear reactor types; environmental advantages/disadvantages; safety issues; radiation and human health; radioactive wastes; nuclear fission)

**E.** [**Hydroelectric Power**](http://enviroliteracy.org/article.php/59.html)
(Dams; flood control; salmon; silting; other impacts)

**F.** [**Energy Conservation**](http://enviroliteracy.org/category.php/4.html)
(Energy efficiency; CAFE standards; [hybrid electric vehicles](http://enviroliteracy.org/article.php/1432.html); mass transit)

**G.** [**Renewable Energy**](http://enviroliteracy.org/subcategory.php/32.html)
(Solar energy; solar electricity; hydrogen fuel cells; biomass; wind energy; small-scale hydroelectric; ocean waves and tidal energy; geothermal; environmental advantages/disadvantages)

**VI. POLLUTION** (25-30%)

**A. Pollution Types**1. [Air Pollution](http://www.enviroliteracy.org/subcategory.php/3.html)
(Sources- primary and secondary; major air pollutants; measurement units; smog; acid deposition- causes and effects; heat islands and temperature inversions; indoor air pollution; remediation and reduction strategies; Clean Air Act and other Relevant Laws)
2. Noise Pollution
(Sources; effects; Control Measures)
3. [Water Pollution](http://enviroliteracy.org/category.php/14.html)
(Types; sources, causes, and effects; cultural eutrophication; groundwater pollution; maintaining water quality; water purification; sewage treatment/septic systems; Clean Water Act and other relevant laws)
4. [Solid Waste](http://enviroliteracy.org/subcategory.php/41.html)
(Types; disposal; reduction)

**B.** [**Impacts on the Environment and Human Health**](http://enviroliteracy.org/category.php/5.html)
1. [Hazards to human health](http://www.enviroliteracy.org/subcategory.php/170.html)(Environmental risk analysis; acute and chronic effects; dose-response relationships; air pollutants; smoking and other risks)
2. [Hazardous chemicals in the environment](http://enviroliteracy.org/article.php/1391.html)
(Types of hazardous waste; treatment/disposal of hazardous waste; cleanup of contaminated sites; biomagnification; relevant laws )

**C.** [**Economic Impacts**](http://www.enviroliteracy.org/subcategory.php/12.html)
(Cost-benefit analysis; externalities; marginal costs; sustainability)

**VII. GLOBAL CHANGE** (10-15%)

**A.** [**Stratospheric Zone**](http://enviroliteracy.org/category.php/1.html)
(Formation of stratospheric ozone; ultraviolet radiation; [causes of ozone depletion](http://enviroliteracy.org/article.php/1282.html); strategies for reducing ozone depletion; relevant laws and treaties)

**B.** [**Global Warming**](http://enviroliteracy.org/subcategory.php/8.html)
(Greenhouse gases and the greenhouse effect; impacts and consequences of global warming; reducing climate change; relevant laws and treaties)

**C.** [**Loss of Biodiversity**](http://enviroliteracy.org/subcategory.php/107.html)
1. [Habitat loss](http://enviroliteracy.org/article.php/1359.html); overuse; pollution; [introduced species](http://enviroliteracy.org/article.php/40.html); [endangered and extinct species](http://enviroliteracy.org/article.php/33.html)
2. Maintenance through conservation
3. Relevant laws and treaties

Other Quick Review Resources

Environmental Timeline

<http://www.nytimes.com/interactive/2010/04/22/science/earth/20100422_environment_timeline.html?hp>

Review Sheets (especially like the Chem Review and the Math review

<http://home.lcusd.net/lchs/mewoldsen/ReviewSheets.htm>