

Des Moines Area Community College

Course Information – EFFECTIVE Aug. 2006

Acronym/Number ENV 115 Historical Ref [BIOL 118](#)

Title Environmental Science

Credit breakout 3 3 0 0 0
(credit lecture lab practicum work experience)

COURSE DESCRIPTION:

This course combines the basic principles of ecology with current environmental issues. Issues examined include energy, land use, pesticides, and pollution. Wildlife, fisheries, forestry, soil and water resources are also emphasized. Designed for the non-science major.

COURSE COMPETENCIES:

During this course, the student will be expected to:

1. Identify important events and persons in the history of the conservation movement.
 - 1.1 Relate changes in technology and medicine in history to changes in the conservation movement.
2. Use terms basic to the science of ecology.
3. Describe the major landforms of Iowa and environmental issues relating to landform ecology.
4. Relate world population problems to principles of ecology.
 - 4.1 Discuss the issues of population control.
 - 4.2 Compare population growth in less developed countries to that of more developed countries.
5. Use terminology describing soils and soil conservation.
 - 5.1 Classify soils.
 - 5.2 Describe factors causing soil erosion.
 - 5.3 Describe soil conservation practices.
 - 5.4 Explain how federal and state legislation affects soil erosion.
 - 5.5 Discuss the Conservation Reserve Program.
 - 5.6 Discuss approaches to sustainable agriculture.
 - 5.7 Discuss how climate and other environmental and biological factors affect soil profiles and their distribution.
 - 5.8 Classify soil profile horizons.
6. Relate the Green Revolution and world population growth to current environmental issues.
 - 6.1 Compare organic and sustainable agriculture to conventional agriculture including their environmental effects and impact on human health.

ENV 115

7. Discuss methods of pest control and consequences of their use.
8. Use terminology related to water movement, cycling, and conservation.
 - 8.1 Identify water conservation methods.
 - 8.2 Identify solutions to flooding.
 - 8.3 Identify the causes and consequences to the increased frequency and magnitude of flooding.
9. Classify types, causes and controls of water pollution.
10. Discuss the objectives of wastewater treatment.
 - 10.1 Describe the stages of municipal wastewater treatment.
 - 10.2 Compare septic tank and lagoon wastewater treatment to municipal wastewater treatment.
11. Point out the characteristics of freshwater, estuary, and ocean environments.
 - 11.1 Differentiate between oligotrophic, mesotrophic and eutrophic Lakes.
 - 11.2 Describe lake zonation.
 - 11.3 Identify characteristics of estuaries.
 - 11.4 Describe ocean zonation.
 - 11.5 Identify benefits of wetlands conservation.
 - 11.6 Describe seasonal changes in lake zonation.
 - 11.7 Define wetlands and their characteristics.
12. Relate human activities to fisheries and fisheries management.
13. Discuss forest management practices.
 - 13.1 Compare and contrast clear cutting to selective cutting.
 - 13.2 Discuss the control of invasive exotic species.
14. Describe methods of solid waste management and hazardous waste management.
15. Identify causes of air pollution and methods for prevention and control.
 - 15.1 Discuss the cause, effect and means of controlling acid rain and global warming.
 - 15.2 Discuss the issues surrounding the debate over global warming.
16. Identify environmental effects of mining.
17. Identify advantages and disadvantages of nonrenewable and renewable energy sources.
 - 17.1 Compare and contrast the use of fossil fuels to renewable energy sources.
18. Discuss issues in wildlife management including fragmentation, habitat preservation and endangered species and the potential of ecological restoration to address these issues.
 - 18.1 Discuss biodiversity loss and species extinction.
 - 18.2 Discuss methods of improving wildlife habitat.
19. Discuss current issues in the field of environmental conservation.

ENV 115

ENV 115

COMPETENCIES REVIEWED AND APPROVED BY: Gary Nelson

DATE: 7/2006

FACULTY:

- 1. Curtis Eckerman**
- 2. Danielle Wirth**
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- 5.**
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Effective date: _____

by: Gary Nelson

Campus: A B C U N W OC

extension: 6531

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