Bemidji State University

BIOL 3723: Ecosystem Ecology

A. COURSE DESCRIPTION
   Credits: 3
   Lecture Hours/Week: *.*
   Lab Hours/Week: *.*
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None
   Fundamentals of the study of ecosystems, with emphasis on the integration of abiotic and biotic components in the development of ecosystem processes. Comparisons and interactions between terrestrial, wetland, aquatic, and atmospheric systems across the major biomes. Prerequisite: BIOL 2610.

B. COURSE EFFECTIVE DATES: 11/30/2003 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Aquatic Vegetation
   2. Biogeochemical Cycling in Aquatic Ecosystems
   3. Biogeochemical Cycling in Terrestrial Ecosystems
   4. Carbon Fixation, Production & Energy Flow
   5. Community Level Process & Invader Success
   6. Disturbance: Ecosystem resistance & Resilience
   7. Earth's Climate System
   8. Ecosystem Management & Sustainability
   9. Ecosystem Stability & Foodweb Structures
  10. Geology & Soils
  11. Global Biogeochemical Cycles
  12. Historical Considerations
  13. Hydrology
  14. LTER Programs for Ecosystems studies
  15. Landscape Heterogeneity
  16. Linking Terrestrial & Aquatic Ecosystems
  17. Nitrogen Cycle
  18. Nitrogen in Aquatic/Wetland Systems
  19. Role of Vegetation in Biogeochemical Cycles
  20. Temporal Dynamics
  21. Terrestrial Decomposition/ Aquatic Decomposition
  22. The Ecosystem Concept
  23. Trophic Dynamics
D. LEARNING OUTCOMES (General)

1. compare biomes in terms of ecosystem functions.
2. understand the interconnectivity between individual components of an ecosystem and between different ecosystems on a global-scale.
3. identify ecological functions at the ecosystem level.
4. assess the scale of interaction and integration between abiotic and biotic components.
5. learn a fundamental understanding ecosystem processes and the historical development of the ecosystem concept.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted