

# Bemidji State University

## GEOG 4140: Landscape Ecology

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course examines the connection of pattern and process at the scale of the landscape. Students will utilize several analytical methods to examine and explain how humans, disturbance and natural process work in concert to create landscape-level dynamics and change. The course will also cover how landscape ecology is applied to assist in conservation efforts. Prerequisites: GEOG 2100 and GEOG 3231.

**B. COURSE EFFECTIVE DATES:** 08/25/2014 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. . Introduction to Landscape Ecology
2. . Scale
3. . Introduction to Models in Landscape Ecology
4. . Causes of Landscape Pattern
5. . Quantifying Landscape Pattern
6. . Fractal Landscapes
7. . Landscape Disturbance Dynamics
8. . Organisms and Landscape Pattern
9. . Ecosystem Processes in the Landscape
10. . Applied Landscape Ecology

### D. LEARNING OUTCOMES (General)

1. ζ Understand the historical trajectory of the key conceptual ideas and discoveries in the field of landscape ecology.
2. ζ Understand concepts such as patch, edge, and core that are central to the understanding of landscape form and process.
3. ζ Create and evaluate key metrics using GIS and other spatial frameworks to evaluate patch and landscape dynamics.
4. ζ Understand how landscape ecological principles can be applied for conservation efforts.
5. ζ Understand how fractals and fragmentation help explain landscape processes.
6. ζ Effectively communicate concepts related to landscape ecology.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted