

# Minnesota State University Moorhead

## BIOL 614: Plant Evolution

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course provides a current look at developments in evolutionary biology, including genetics and molecular advances, from the perspective of plants. Readings from a recently published text will be augmented by discussions of primary literature papers, along with some fieldwork including identification and study of plant species at sites near participants' locations.

### B. COURSE EFFECTIVE DATES: 02/02/2019 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Population Genetics, Adaptation, and Evolution: An Overview
2. Evolutionary Transformations: Before and After Land Plants
3. Evolutionary-Developmental Biology of Plants
4. Speciation and Microevolution in Plants
5. Macroevolutionary Patterns in Plants
6. Evolution of Multicellularity
7. Biophysics and Evolution of Plants
8. Evolutionary Ecology of Plants

### D. LEARNING OUTCOMES (General)

1. Describe the major evolutionary transformations in plants that have influenced our biosphere.
2. Evaluate lines of evidence supporting evolutionary theory involving plants.
3. Analyze current research advances in evolutionary biology involving plants (including *devo*, speciation, macroevolution, biophysics, and evolutionary ecology research).
4. Apply knowledge of basic plant morphological traits to identify plants in the field and determine their evolutionary relationships.
5. Practice research skills by reading, synthesizing, and communicating results from primary literature.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted