

# North Hennepin Community College

## BIOL 2030: Plant Biology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 0

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisites

BIOL 1002 - Biology II

BIOL 1102 - Principles of Biology II (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course is an introduction to plant biology, and is intended for students majoring in biology and related fields. The course includes a survey of the major taxonomic groups of plants, fundamentals of plant anatomy, physiology, reproduction and development, evolution, and systematics. (3 hours lecture, 3 hours lab)

Prerequisite: Biol 1001/1101 and Biol 1002/1102 with a grade of C or better, or consent of the professor.

**B. COURSE EFFECTIVE DATES:** 08/25/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. This course introduces students to the fundamental aspects of plant biology. The course includes an overview of plant cell structure, tissues, and anatomy of vascular plants; C3 and C4 photosynthesis; water potential and nutrient transport; reproduction cycles for the major groups; and an introduction to classification and systematics. The course culminates with a survey of the major plant kingdom divisions and their classes, and lays the evolutionary foundation for further studies in plant phylogeny. Students apply the major concepts and theories in weekly laboratories.
2. The course includes field trips when weather permits.

### D. LEARNING OUTCOMES (General)

1. Use the scientific method and describe its strengths and limitations as a method of inquiry. (MnTC G2, comps. a, b, c, d; MnTC G3, comp. a; ELO 1, 2)
2. Practice developing hypotheses and predictions for laboratory and field observations and experiments (MnTC G2, comps. a, b, c, d; MnTC G3, comp. b; ELO 1, 2, 4)
3. Explain and differentiate among predictions, observations, and interpretation of qualitative and quantitative data from comparative and experimental studies. (MnTC G3, comp. c; ELO 1, 2)
4. Apply appropriate statistical and graphical analyses of experimental and observational data, communicating the observations and interpretations both orally and in writing. (MnTC G3, comps. b, c; ELO 1, 2)
5. Demonstrate an understanding of phylogenetic methodologies apply the techniques to the development and interpretation of cladograms. (MnTC G3, comps. a, b; ELO 1, 2, 4)
6. Describe the similarities and differences among plant phyla, using an understanding of the evolutionary history of the phyla. (MnTC G3, comps. A, ELO 1, 2)
7. Articulate the critical role of evolutionary theory in biology. (MnTC G3, comp. a, d; ELO 1, 2, 3)

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

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

1. Knowledge of Human Cultures and the Physical and Natural World -Through study in the sciences, mathematics, social sciences, humanities, histories, languages, the arts, technology and professions.
2. Intellectual and Practical Skills-Including: Inquiry and analysis; Critical and creative thinking; Written and oral communication; Quantitative literacy; Information literacy; Teamwork and problem solving.
3. Personal and Social Responsibility and Engagement -Including: Civic knowledge and involvement - campus, local and global; Intercultural knowledge and competence; Ethical reasoning and action; Foundations and skills for lifelong learning.
4. Integrative and Applied Learning -Including: Synthesis and advanced accomplishment across general education, liberal studies, specialized studies and activities in the broader campus community.