Minnesota State University Moorhead

BIOL 347: Plant Physiology

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 2

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:
This course requires both of these prerequisites
CHEM 210 - General Chemistry II
CHEM 210L - General Chemistry II Lab

Corequisites: BIOL 347L

MnTC Goals: None

Structure and function of higher plants with emphasis on molecular and cellular physiology as related to whole plant functions. Topics include growth and development, photosynthesis, and environmental aspects of plant physiology. Registration in BIOL 347 Lab required.

B. COURSE EFFECTIVE DATES: 08/24/2009 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Overview of biomolecules and related molecule concepts
2. Overview of the plant cell: structure/function of a plant cell
3. Overview of some important plant physiochemical factors and processes: -Energy, chemical energy, osmosis, water potential
4. Whole plant processes: root physiology, absorption of H2O and minerals from soils; long distance transport of fluids in xylem and phloem vascular systems
5. Photosynthesis and related energy metabolism
6. Plant growth and development

D. LEARNING OUTCOMES (General)

1. Learn basic physiological principals common to plants, animals, and fungi.
2. Learn physiological principals specific to plants as organisms.
3. Learn hands on training with up-to-date experimental tools.
4. Learn measuring and quantitation of plant physiological processes.
5. Conduct research-type investigations to obtain original data on plant processes.
6. Use basic statistical tools for analysis of data.
7. Understand the components behind experimental design.
8. Learn how to write a scientific laboratory report.
9. Communicate to peers their results of laboratory experiments.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted