



South Central College

PLSC 1300 Agronomy I

Course Outcome Summary

Course Information

Description	This course covers agronomy principles for crop growth in the upper midwest. The course covers the components of plant growth, seed quality, plant structures, plant development, plant classification, maturity systems and seeding rates. Corn and soybean production will be the main crops being discussed. The lab component will include activities in seed germination, staging of plant growth, stem, root, and flower structures. (Prerequisites: None)
Total Credits	2
Total Hours	32

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32

Pre/Corequisites

No prerequisites for this class

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

- 1. Discuss the role agronomy (crop production) has played and continues to play in the world, national and state economy and culture.**

Learning Objectives

Discuss the importance of crops to society as sources of food, feed and fiber.
List the important cereal, feed grains, oil and fiber crops.
Identify the important grain crops grown in Minnesota.
Define the term plant taxonomy.
Classify plants on the basis of agronomic use.
Describe the binomial system of naming plants.

- 2. Describe the structure and function of the leaf, stem, root and flower.**

Learning Objectives

Classify plants on the basis of agronomic use, growth form, stem type and growth cycle.
Identify plant structures as to the type of root or stem.
List the two generalized types of tissues in plants.
Identify plants as to the type of fruit.
Identify parts of complete and incomplete flowers.

3. Describe how plants are identified using morphological features of the leaf, stem, flower and seed in dicots and monocots.

Learning Objectives

Compare and contrast a monocotyledonous to a dicotyledonous plant.
Explain the concept of dioecious and monoecious.
Classify agronomic crops as monocot or dicot.

4. Describe the conditions that may affect seed germination and seedling growth.

Learning Objectives

Identify parts of a seed and explain their role in seed germination and seedling growth.
Explain the germination process and conditions which may influence this process.
Demonstrate germination and vigor tests for crop seeds.
Discuss the two modes of germination.
Calculate germination percentage on selected crop seeds.

5. Explain the growth and development of the monocot and dicot plants.

Learning Objectives

Identify soybean types.
List the stages of development of a corn plant.
Describe the production of a corn hybrid.
Explain the difference between a hybrid and a variety.
Discuss the concept and application of growing degree days.

6. Describe the ways in which environmental factors affect the vegetative and reproductive growth of crops.

Learning Objectives

Describe the plant processes of photosynthesis, respiration, transpiration and absorption.
Calculate the cumulative temperature influence on the growth and maturation of crops.
Define photoperiodism and explain how it affects plant growth.
List examples of long-day, short-day and day-neutral plants.

7. Discuss management practices which influence the growth and development of agronomics crops.

Learning Objectives

Determine the planting population for corn and soybeans.
Calculate the standard deviation for seed spacing in a corn field.
Discuss the factors affecting seeding rate and how it is calculated.
Determine the planting depth of a corn plant.
Calculate the cost of production for a bushel of corn and bushel of soybeans.

8. Display participation and professionalism in class.

Learning Objectives

Display professional demeanor while interacting with instructor and other students.
Prepare for class by reading the assignments and completing the homework.
Listen attentively to the instructor and student speakers.

SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request

and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: www.southcentral.edu/disability

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.