

Landscape Management

Levels:	Grades 9–12
Units of Credit:	0.50
CIP Code:	01.0641
Core Code:	30-01-00-00-160
Prerequisite:	None
Skill Test:	# 133

COURSE DESCRIPTION

Students will develop knowledge and skills in nursery operation and landscape management practices that will prepare the students to select appropriate plant materials and to design, install, and maintain interior and exterior plantings and hardscapes. They will also learn to maintain the facilities and equipment associated with this industry.

CORE STANDARDS, OBJECTIVES, AND INDICATORS

Use the following Standard 1 and Standard 2 if this course is taught at the entry level.

STANDARD 1

Students will explain the role of FFA in agricultural education.

Objective 1: Discuss the history and organization of FFA as it relates to the complete program of agricultural education.

- a. Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and FFA.
- b. Describe how, when, and why FFA was organized.
- c. Identify key FFA historical events.
- d. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of FFA.
- e. Recite and explain the meaning of the FFA Creed.
- f. Discuss the meaning and purpose of a program of activities and its committee structure.
- g. List FFA chapter officers, and discuss the role of each.

Objective 2: Identify opportunities in FFA.

- a. Describe FFA opportunities that develop leadership skills, personal growth, and career success.
- b. Summarize major state and national activities available to FFA members.

Objective 3: Describe FFA degrees, awards, and career development events (CDES).

- a. List and explain the FFA degree areas.
- b. Identify FFA proficiency awards.
- c. List and discuss various team and individual CDEs.

STANDARD 2

Students will explain the role of supervised agricultural experience (SAE) programs in agricultural education.

Objective 1: Examine the responsibilities and benefits associated with an SAE.

- a. Explain the meaning and benefits of supervised agricultural experience.
- b. Explain the characteristics of an effective SAE program and the responsibilities of those involved.

Objective 2: Determine the types of SAE programs.

- a. Compare entrepreneurship SAEs and placement SAEs.
- b. Describe research/experimentation SAEs.
- c. Describe exploratory SAEs.

Objective 3: Plan an SAE program.

- a. Identify the steps in planning an SAE program.
- b. Describe the function of a business/training plan and/or agreement in an SAE program.
- c. Develop a short-range plan and a long-range plan for an SAE program.
- d. Relate classroom and laboratory instruction to an SAE program.

Objective 4: Maintain and use SAE records.

- a. Explain the importance of keeping records on an SAE program.
- b. Explain how SAE records are organized.
- c. Follow approved procedures to make entries in SAE records.

Use the following Standard 1 and Standard 2 if this course is taught at the advanced level.

STANDARD 1

Students will develop personal, leadership, and career skills through FFA participation.

Objective 1: Assess the role of FFA participation in developing personal and leadership skills.

- a. Identify important personal skills and the strategies to use in developing the skills.
- b. Identify important leadership skills and the role of FFA participation in developing the skills.

Objective 2: Assess the role of FFA participation in developing career skills.

- a. List and describe proficiency awards appropriate for horticulture
- b. List and describe career development events appropriate for horticulture.
- c. Relate the importance of supervised agricultural experience to FFA achievement.
- d. Utilize FFA and supervised agricultural experience participation to gain advanced degrees of FFA membership.

STANDARD 2

Students will explain the maintenance and expansion of supervised agricultural experience (SAE) programs.

Objective 1: Maintain and use SAE records.

- a. Explain how SAE records are maintained from year to year.
- b. Explain how to summarize and analyze SAE records.

Objective 2: Devise long-range plans for expanding SAE programs.

- a. Evaluate the overall quality of a current SAE, and determine how to make it more productive or profitable.
- b. Explain factors that should be considered in expanding an SAE program.
- c. Explain how placement SAE and ownership SAE programs may be expanded.

STANDARD 3

Students will demonstrate an understanding of landscape design components.

Objective 1: Identify and categorize landscape plants.

- a. Explain systems used to classify plants.
- b. Classify landscape plants according to the hierarchical classification system, life cycles, plant use, and status as monocotyledons or dicotyledons.
- c. Identify woody landscape plants.

- d. Identify annuals, biennials, and herbaceous perennials used in the landscape.
- e. Identify turfgrass species.
- f. Explain the use of a USDA plant hardiness zone map and plant heat zone maps in the selection of landscaping plants.

Objective 2: Compile information in preparation for landscape design work.

- a. Determine the client's needs and desires.
- b. Analyze the site conditions, and prepare a site analysis plan.
- c. Identify drafting equipment, and demonstrate its proper use.

Objective 3: Create a functional and aesthetically pleasing landscape plan.

- a. Create a base plan to scale.
- b. Identify and draw landscape symbols on the landscape plan.
- c. Identify and design the major areas of a residential landscape (e.g., public, outdoor living, service)
- d. Organize the location of activities within the landscape plan.
- e. Apply the principles and elements of design to the landscape.
- f. Select plant materials for the landscape.
- g. Select hardscape materials for the landscape.
- h. Plan for xeriscaping and soil erosion control.
- i. Develop bed patterns for the landscape.
- j. Locate trees in the landscape plan.
- k. Label the landscape plan.

Objective 4: Explain landscape design business concepts.

- a. Differentiate between an estimate and a bid.
- b. Describe landscape specifications.
- c. Calculate common landscape measurements.
- d. Prepare a cost estimate for a landscape plan.
- e. Prepare a bid for a landscape design and installation project.

STANDARD 4

Students will demonstrate landscape plant installation and maintenance practices.

Objective 1: Install a landscape area based on a landscape design.

- a. Read a landscape plan, and locate plant and hardscape placement.
- b. Plant seeds, bulbs, ground covers, annuals, perennials, and woody plants according to instructions.
- c. Provide post-planting care, such as appropriate watering, bracing, and mulching.

Objective 2: Explain turfgrass installation and maintenance methods.

- a. Identify methods of turfgrass establishment and the advantages and disadvantages of each method.
- b. Interpret a seed label.
- c. Explain proper turfgrass watering practices.
- d. Identify and explain the use of equipment for installing and maintaining turfgrass.
- e. Explain the reason for, and the process of, aerating turfgrass.
- f. Describe mowing procedures.
- g. Explain the purpose of and procedure for top dressing turfgrass.
- h. Explain overseeding of turfgrass.
- i. Interpret fertilizer bag labels.
- j. Calculate the quantity of fertilizer needed for turfgrass.
- k. Apply fertilizers as needed to maintain nutrient levels.

Objective 3: Describe proper tree and shrub maintenance practices and procedures.

- a. Identify symptoms of water stress in trees and shrubs.
- b. Explain recommended watering practices for trees and shrubs.
- c. Identify symptoms of nutrient deficiency in trees and shrubs.
- d. Explain guidelines for fertilizing trees and shrubs.
- e. Describe how to select and apply mulches to the landscape.
- f. Identify tools used for pruning trees and shrubs.
- g. Demonstrate various techniques for pruning trees and shrubs.

Objective 4: Examine the physical and chemical properties of growing media in landscape applications.

- a. Describe the components of growing media.
- b. Describe the functions of growing media.
- c. Determine desirable properties of growing media.
- d. Evaluate the advantages and disadvantages of soilless media.
- e. Demonstrate proper techniques for sampling growing media.
- f. Test and determine pH level of various growing media.
- g. Interpret pH test results of a growing medium sample.
- h. Describe pH and how it is modified.

STANDARD 5

Students will describe integrated pest management.

Objective 1: Describe the principles of integrated pest management.

- a. Explain integrated pest management (IPM).
- b. Identify benefits of IPM.
- c. Describe pest control strategies associated with IPM.

Objective 2: Identify plant pests and diseases and their causes.

- a. Identify types of plant pests and disorders.
- b. Identify weed, insect, rodent, and fungi pests.
- c. Identify infectious and noninfectious plant diseases.

Objective 3: Explain procedures for the safe handling, use, and storage of pesticides.

- a. Explain risks and benefits associated with the materials and methods used in plant pest management.
- b. Interpret pesticide labels.
- c. Explain procedures for mixing and storing pesticides.
- d. Describe types of pesticide controls and formulations.
- e. Explain the safety practices that should be followed when applying pesticides.
- f. Describe the proper disposal of surplus pesticides and empty containers.
- g. Evaluate environmental and consumer concerns regarding pest management strategies.

STANDARD 6

Students will demonstrate the installation and maintenance of irrigation systems.

Objective 1: Prepare for installation of a sprinkler system.

- a. Analyze site conditions.
- b. Calculate area coverage dimensions.
- c. Calculate water flow in gallons per minute (GPM).
- d. Identify components of irrigation systems, including pipes and joints.

Objective 2: Plan and install a sprinkler system.

- a. Plan and illustrate a distribution system.
- b. Select components for the irrigation system.
- c. Calculate the number of heads, valves, and drains and the length of pipe needed.

- d. Calculate the cost of the parts, supplies, and labor for system installation.
- e. Identify factors involved in the bidding process.
- f. Cut, fit, and install PVC pipes and fittings.
- g. Install valves and faucets.
- h. Perform an irrigation system test.

Objective 3: Maintain a sprinkler system.

- a. Check for leaks or broken heads.
- b. Replace or repair heads.
- c. Replace or repair pipe.
- d. Adjust sprinkler head height.

STANDARD 7

Students will demonstrate landscape equipment maintenance and operation.

Objective 1: Demonstrate the use of equipment in landscape maintenance.

- a. Identify common equipment and its use in landscape maintenance.
- b. Explain the meaning and importance of the operator's manual.
- c. Identify the location and use of controls on equipment.
- d. Follow safe practices in the use of landscape maintenance equipment.

Objective 2: Properly maintain equipment used in landscape maintenance.

- a. Complete basic tire inspections and perform maintenance for safe tire performance.
- b. Check the oil level, and add oil if necessary.
- c. Check the fuel level, and add fuel if necessary.
- d. Service the air cleaner.