Gardening and Landscaping
Course Design
2007-2008

Course Information
Organization: EASTERN ARIZONA COLLEGE
Division: Science
Course Number: AGR 230
Title: Gardening and Landscaping
Credits: 3
Developed by: Randall Norton
Lecture/Lab Ratio: 3 Lecture/0 Lab
Transfer Status: Non-transferable
Activity Course: No
CIP Code: 01.0300
Assessment Mode: Pre/Post Test (20 Questions/100 Points)
Semester Taught: Spring
GE Category: None
Separate Lab: No
Awareness Course: No
Intensive Writing Course: No

Prerequisites
None

Educational Value
The course is intended to be of general interest and for personal development of citizens of the community and full-time EAC students.

Description
Learn the basic principles of gardening and landscaping in a semi-arid desert environment. Successful completion of this course will fulfill the training requirements for the University of Arizona Cooperative Extension Master Gardener Program.

Supplies
None
Competencies and Performance Standards

1. Integrate knowledge of basic botany.
   
   **Learning objectives**
   
   What you will learn as you master the competency:
   
   - Gain an understanding of basic botany.
   - Explore plant growth and development.
   - Identify morphological features of plant parts.
   
   **Performance Standards**
   
   You will demonstrate your competence:
   
   - on the midterm, final, and post test.
   
   Your performance will be successful when:
   
   - student gains an understanding of basic botany.
   - student explores how plants grow and develop.
   - student successfully identifies plant parts and their functions.

2. Integrate knowledge of plant physiology.
   
   **Learning objectives**
   
   What you will learn as you master the competency:
   
   - Appreciate the importance of plants in our ecological systems.
   - Explore photosynthesis.
   - Explore respiration and water relations.
   - Explore mineral nutrition.
   - Explore hormones involved in plant growth regulation.
   
   **Performance Standards**
   
   You will demonstrate your competence:
   
   - on the midterm, final, and post test.
   
   Your performance will be successful when:
   
   - student explores photosynthesis.
   - student explores respiration and water relations.
   - student explores mineral nutrition.
   - student explores hormones involved in plant growth regulation.

3. Integrate knowledge of soils and fertilizer.
   
   **Learning objectives**
   
   What you will learn as you master the competency:
   
   - Gain an understanding of the basics of soil physical and chemical components and how they relate to gardening and landscaping in an arid environment.
   - Understand the relationship between the proper use of fertilizers and plant nutrition.
• Explore composting.

**Performance Standards**

*You will demonstrate your competence:*

- quantification of specific soil chemical and physical characteristics
- on the midterm, final, and post test.

*Your performance will be successful when:*

- student understands the basics of soil physical and chemical components and how they relate to gardening and landscaping.
- student understands fertilizer and plant nutrition.
- student explores composting.

4. **Describe methods of plant propagation.**

*Learning objectives*

*What you will learn as you master the competency:*

- Describe the use of sexual (seeds) plant propagation.
- Describe the use of asexual (rooting, cuttings, bulbs, layering, budding and grafting) plant propagation.

**Performance Standards**

*You will demonstrate your competence:*

- on the midterm, final, and post test.

*Your performance will be successful when:*

- student describes the use of sexual (seeds) plant propagation.
- student describes the use of asexual (rooting, cuttings, bulbs, layering, budding and grafting) plant propagation.

5. **Integrate knowledge of entomology.**

*Learning objectives*

*What you will learn as you master the competency:*

- Gain an understanding of the basics of insect identification and control.
- Integrate pest management principles.

**Performance Standards**

*You will demonstrate your competence:*

- on the midterm, final, and post test.

*Your performance will be successful when:*

- student understands the basics of insect identification and control.
- student integrates pest management principles.

6. **Diagnosing plant problems.**

*Learning objectives*
What you will learn as you master the competency:

- Describe damage caused by both living and non-living plant pathogens.
- Identify potential plant problems.
- Describe ways to control causal agents.

**Performance Standards**

You will demonstrate your competence:

- on the midterm, final, and post test.

Your performance will be successful when:

- student describes damage caused by both living and non-living plant pathogens.
- student identifies potential plant problems.
- student describes ways to control causal agents.

7. **Integrate knowledge of plant pruning.**

   **Learning objectives**

   What you will learn as you master the competency:

   - Describe correct principles for pruning fruit trees, grape vines, desert plants and ornamental plants.
   - Describe correct methods of caring for pruned plants.

   **Performance Standards**

   You will demonstrate your competence:

   - in the development of an individual project.
   - on the midterm, final, and post test.

   Your performance will be successful when:

   - student describes correct principles for pruning fruit trees, grape vines, desert plants and ornamental plants.
   - student describes correct methods of irrigating and staking pruned plants.

8. **Integrate knowledge of vegetable and herb gardening.**

   **Learning objectives**

   What you will learn as you master the competency:

   - Describe planning, planting, growing, and maintaining home vegetable and herb gardens.
   - Describe harvesting and utilization of vegetables grown in home gardens.

   **Performance Standards**

   You will demonstrate your competence:

   - in the development of an individual project.
   - on the midterm, final, and post test.

   Your performance will be successful when:

   - student describes planning, planting, growing, and irrigation methods in vegetable and herb gardening.
• student describes harvesting and utilization of vegetables grown in home gardens.

9. **Integrate knowledge of fruit production.**

   **Learning objectives**
   
   *What you will learn as you master the competency:*
   
   • Discuss all aspects of growing tree fruits.
   • Discuss all aspects of growing grapes and other small fruits.

   **Performance Standards**
   
   *You will demonstrate your competence:*
   
   • on the midterm, final, and post test.

   *Your performance will be successful when:*
   
   • student discusses all aspects of growing tree fruits.
   • student discusses all aspects of growing grapes and other small fruits.

10. **Develop landscape program for individual project.**

    **Learning objectives**
    
    *What you will learn as you master the competency:*
    
    • Identify reasons for landscape design.
    • Integrate knowledge of the basics of the landscape design process.
    • Integrate knowledge of site evaluation in terms of space determinations, space relationships, and macro and micro climate considerations.
    • Evaluate site information.
    • Develop a bubble plan.
    • Refine designs regarding space relationships, construction materials, planting plans, and drafting techniques.

    **Performance Standards**
    
    *You will demonstrate your competence:*
    
    • in the development of an individual project.
    • on the midterm, final, and post test.

    *Your performance will be successful when:*
    
    • student identifies reasons for landscape design.
    • student integrates knowledge of the basics of the landscape design process.
    • student integrates knowledge of site evaluation in terms of space determinations, space relationships, and macro and micro climate considerations.
    • student evaluates site information.
    • student develops a bubble plan.
    • student refines designs regarding space relationships, construction materials, planting plans, and drafting techniques.
11. Integrate the knowledge of lawns.

**Learning objectives**

*What you will learn as you master the competency:*

- Describe proper maintenance of lawns.
- Gain an understanding of grass selection and identification.
- Describe identification and control of lawn problems.
- Describe the proper use and maintenance of lawn equipment.

**Performance Standards**

*You will demonstrate your competence:*

- in the development of an individual project.
- on the midterm, final, and post test.

*Your performance will be successful when:*

- student describes proper maintenance of lawns.
- student gains an understanding of grass selection and identification.
- student describes identification and control of lawn problems.
- student describes the proper use and maintenance of lawn equipment.

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12. Describe the use of biotechnology and genetic engineering for plant improvement.

**Learning objectives**

*What you will learn as you master the competency:*

- Understand the history of genetic engineering and modification.
- Understand how this technology has been used to improve the plant’s ability to avoid or be tolerant to environmental stresses.

**Performance Standards**

*You will demonstrate your competence:*

- on the midterm, final, and post test

*Your performance will be successful when:*

- student describes the benefits and risk of genetic engineering.

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13. Describe the use and care of ornamental plants.

**Learning objectives**

*What you will learn as you master the competency:*

- Describe the proper selection and care of annual landscape plants.
- Describe the proper selection and care of perennial landscape plants.
- Describe the proper development and design of landscape beds using ornamental plants.

**Performance Standards**

*You will demonstrate your competence:*

- on the midterm, final, and post test.
• on the development of a plan for an ornamental garden

*Your performance will be successful when:*

• student describes the proper selection and care of annual landscape plants.
• student describes the proper selection and care of perennial landscape plants.
• student understands the proper design of landscape beds using ornamental plants.

**Types of Instruction**

Lectures
Videos/Slides
Overhead Transparencies
Demonstrations
Guest Speakers in Specialty Fields
A minimum of one Field Trip

**Grading Information**

**Grading Rationale**

Students will be required to sign a form the first class period stating if they are taking the course for a Pass/Fail grade or a letter grade for transfer credit.

Three take home problem-solving exams will be given: One following Class 6, one covering the landscape section (the project), and the final exam. These 3 exams will each be worth 30% of the grade. The Post test will be worth the remaining 10% of the grade. Any student who does not miss more than three classes will receive at least a passing grade regardless of scores on the exams.

Note: Withdrawal before the end of the registration period will result in the course not showing on your record. If a student stops attending and to avoid receiving an F, withdrawal must be made by the official withdrawal date, which is normally the last day before Final Exam week. **WITHDRAWING IS THE STUDENT'S RESPONSIBILITY, NOT THE INSTRUCTOR'S.**

**Grading Scale**

A 90 - 100%
B 80 - 89%
C 70 - 79%
D 60 - 69%
F Below 60%
Pass Above 70% or completion of all 4 exams (regardless of the scores) and not missing more than 3 classes.
Fail Below 70% or failure to complete all 4 exams.