

# Gardening and Landscaping

## Course Design

2007-2008

### **Course Information**

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

## **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.

## **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.