### SUSAG 103 Course Outline as of Fall 2021

## **CATALOG INFORMATION**

Dept and Nbr: SUSAG 103 Title: AGRICULTURAL COMPOSTING Full Title: Composting for Organic Farming and Gardening Last Reviewed: 2/8/2021

Units		<b>Course Hours per Week</b>		Nbr of Weeks	<b>Course Hours Total</b>	
Maximum	1.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	1.00	Lab Scheduled	0	4	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	1.00		Contact Total	17.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00

Total Student Learning Hours: 52.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	AG 125

### **Catalog Description:**

Composting is the cornerstone of building healthy soils in all segments of organic agriculture production. Topics will include composting process, the role of microbes in thermophilic composting and a survey of a variety of composting methods. The course is applicable to composting for small commercial fruit, vine and vegetable operations, and the information will be of equal importance for dairy farmers or hay producers, landscapers, as well as for residential settings. This is an introductory course aimed at the professional or serious student of agriculture and horticulture.

### **Prerequisites/Corequisites:**

**Recommended Preparation:** 

#### **Limits on Enrollment:**

#### **Schedule of Classes Information:**

Description: Composting is the cornerstone of building healthy soils in all segments of organic agriculture production. Topics will include composting process, the role of microbes in

thermophilic composting and a survey of a variety of composting methods. The course is applicable to composting for small commercial fruit, vine and vegetable operations, and the information will be of equal importance for dairy farmers or hay producers, landscapers, as well as for residential settings. This is an introductory course aimed at the professional or serious student of agriculture and horticulture. (Grade or P/NP) Prerequisites/Corequisites: Recommended: Limits on Enrollment: Transfer Credit: Repeatability: Two Repeats if Grade was D, F, NC, or NP

# **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

AS Degree: CSU GE:	Area Transfer Area	Effective: Effective:	Inactive: Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer:	Effective:	Inactive:	
UC Transfer:	Effective:	Inactive:	

CID:

### **Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Describe and apply proper technical skills required for composting settings and applications.

2. Discuss issues in compost management and recommend solutions.

3. Relate organics recycling to healthy soils, carbon sequestration and mitigation of climate change.

4. Identify and evaluate key factors that affect the composting process.

### **Objectives:**

At the conclusion of this course, the student should be able to:

- 1. Define the basic process of composting and identify key reasons/benefits for composting.
- 2. Evaluate the function of basic composting components (carbon, nitrogen, water and oxygen) as "essential ingredients" in the composting process.
- 3. Analyze a variety of composting methods, their purposes, strengths, weaknesses, and appropriate applications in residential, commercial, and agricultural settings.
- 4. Identify key factors affecting the composting process.
- 5. Evaluate a demonstration of proper composting techniques appropriate to Sonoma County.
- 6. Recommend specific compost uses for a variety of settings.
- 7. Analyze the qualitative characteristics of finished compost.
- 8. Evaluate proper technical skills required for composting settings and applications.
- 9. Evaluate issues in compost management and recommend solutions.

### **Topics and Scope:**

- I. Composting Process
  - A. Identification
  - B. Analysis
  - C. Benefits for large and small-scale systems and operations
- II. Basic Composting Requirements
- III. Composting Methods
  - A. Residential settings
  - B. Commercial settings
  - C. Agricultural settings

### IV. Key Factors that Influence the Composting Process

- A. Carbon to nitrogen ratio
- B. Surface area
- C. Aeration
- D. Moisture
- E. Temperature
- F. Microorganisms
- V. Technical Skills Required for Composting
  - A. Compare and contrast feedstock properties required for an efficient compost process
  - B. Design optimum conditions for the microbial activity in the compost pile
- C. Compare and contrast composting methods to select the best system for a particular use
- VI. Utilization and Application of Finished Compost and Mulches
  - A. Understand the difference between a mulch and compost
- B. Understand standard application rates for agriculture and landscaping, as well as how to determine unique rates.
  - C. Match nutrient value of the compost with the corresponding nutrient needs of the plant.
  - D. Utilizing compost for carbon farming and sequestration
- VII. Management and Troubleshooting of Compost Piles
  - A. Maintain records of composting process
- B. Utilize temperature and moisture measurements to make adjustments to optimize conditions in a compost pile

### Assignment:

- 1. Weekly reading (10-20 pages)
- 2. Weekly homework assignments (1-2 pages)
- 3. One research paper on one type of composting method (3-5 pages)
- 4. One compost monitoring project
- 5. Quizzes (2-3)
- 6. One final exam

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Research paper, homework assignments

Writing 20 - 30%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or noncomputational problem solving skills.

None

**Skill Demon** demonstratio performance

Compost mo

Exams: All performance

Quizzes and

**Other:** Inclu fit into the ab

None

### **Representative Textbooks and Materials:**

The Rodale Book of Composting. Martin, Deborah and Gershuny, Grace. Rodale Press. 1992 (classic)

	0 - 0%
<b>Astrations:</b> All skill-based and physical ons used for assessment purposes including skill exams.	
nitoring project	Skill Demonstrations 10 - 20%
forms of formal testing, other than skill exams.	
final exam	Exams 50 - 60%
ides any assessment tools that do not logically bove categories.	

Problem solving

Other Category 0 - 0%