HORT 91A: COMPOSTING THEORY & TECHNIQUES

Foothill College Course Outline of Record

Heading	Value
Units:	1
Hours:	12 lecture per quarter (12 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Student will be able to construct a hot compost pile.
- Student will be able to identify different methods of composting

Description

Comprehensive introduction to the theory and practices utilized in composting of organic materials. Course provides a combination of classroom lectures, demonstrations, and activities geared to providing a clear understanding of various composting techniques, including sustainable waste management practices, recycling of organics, backyard composting, and vermicomposting.

Course Objectives

The student will be able to:
A. discuss the benefits of healthy soils and the contribution composting makes to plant nutrition.
B. demonstrate an understanding of the theory, techniques, and maintenance practices used in composting and vermicomposting.
C. list the steps of the composting process and what products can be used for compost.
D. demonstrate the ability to construct and maintain a variety of composting and vermicomposting systems.
E. compare and describe the various harvesting methods utilized in composting.
F. describe how composting is used by different cultures in agricultural and garden settings.

Course Content

A. Overview of soils and plant nutrition
1. Soil content (organic and inorganic)
2. Soil texture
3. Benefits of healthy soils
B. Composting and vermicomposting theory, techniques, and maintenance practices
1. Composting and vermicomposting systems
2. Benefits of composting
3. Ingredients (ratios of organics, water, oxygen, and other nutrients)
4. Temperature
5. Micro-organisms (fungi and bacteria)
6. Macro-organisms (worms, beetles, etc.)
7. Compost turning
8. Vermicomposting (storage bins, worms, food, maintenance, and harvesting)
C. The composting process
1. Aerobic decomposition of organic materials
2. Which organic materials to utilize (and which not to)
3. Procedures for starting and maintaining a compost pile
D. Construction and maintenance of composting and vermicomposting systems
1. Build or assemble compost bins, piles and related systems
2. Tools utilized in composting
3. Select materials and begin a compost system
4. Troubleshooting (identifying problems and solutions)
E. Harvesting methods
1. Evaluation of compost quality
2. Applications for finished composts
F. Composting systems in different cultural settings
1. Agricultural
2. Garden
3. Food production

Lab Content

Not applicable.

Special Facilities and/or Equipment

Horticultural laboratory, compost area, greenhouse, nursery, and related horticultural facilities and equipment. Students provide pruning shears with sheath, work boots, leather gloves, and clothing for fieldwork.

Method(s) of Evaluation

A. Practical skills tests.
B. Field test on composting techniques.

Method(s) of Instruction

A. Discussions on the benefits of healthy soils.
B. Field installations which demonstrate composting and vermicomposting practices.
C. Discussions of organic materials and the composting process.
D. Presentations and discussions on harvesting methods.
E. Discussions of cultural impacts of composting.

Representative Text(s) and Other Materials

Gardner, Kevin. Garden Compost: Home Composting. Seattle, WA: Amazon (self-published), 2015.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignments include weekly reviews of concepts pertaining to the theory, practice, maintenance, and compost harvesting techniques presented in each specific class (approx. 20 pages per week).

Discipline(s)

Ornamental Horticulture