



# Syllabus

## HRT 111 Tree Culture & Maintenance

### General Information

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**Date**

June 14th, 2018

**Department**

Environmental Conservation and Horticulture

**Course Prefix**

HRT

**Course Number**

111

**Course Title**

Tree Culture & Maintenance

### Course Information

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**Credit Hours**

3

**Lecture Contact Hours**

3

**Lab Contact Hours**

0

**Other Contact Hours**

0

**Catalog Description**

This course introduces individuals to the care of trees and shrubs in the landscape based on industry standards. Topics include: woody plant anatomy, tree and shrub pruning, planting and aftercare, diagnosis of weak/strong tree structure, monetary evaluation of ornamental trees, introduction to climbing, rigging and cabling, root structure, construction vulnerabilities of trees, diagnosis of damaged trees and standard and specifications. Hands-on tree analysis and fault remediation of community trees will be emphasized.

**Key Assessment**

This course does not contain a Key Assessment for any programs

**Prerequisites**

None

**Co-requisites**

None

### **Grading Scheme**

Letter

## **First Year Experience/Capstone Designation**

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This course **DOES NOT** satisfy the outcomes applicable for status as a FYE or Capstone.

## **SUNY General Education**

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This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

## **FLCC Values**

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### **Institutional Learning Outcomes Addressed by the Course**

Critical Thinking  
Citizenship  
Oral Communication

## **Course Learning Outcomes**

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### **Course Learning Outcomes**

1. Identify and explain the basic vascular system of woody plants including how they are affected by tree maintenance practices
2. Explain the industry standards regarding proper pruning methods
3. Identify weak versus strong tree structure and branch attachment as part of diagnosis
4. Explain how trees benefit the environment and society
5. Calculate the monetary value of trees
6. Identify proper care of tree roots when considering planting techniques, construction, soil compaction and deicing salts
7. Explain tree climbing with safety ropes
8. Demonstrate the use of technical arboriculture equipment i.e Resistographs™

## **Outline of Topics Covered**

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1. Introduction to the world of arboriculture
  - a. Professional certifications, publications and resources
  - b. Advantages of trees
  - c. Monetary evaluation of trees in the landscape
2. Introduction to pruning
  - a. Pruning objectives, strategies and dosage
  - b. Inspection and evaluation before pruning and climbing
  - c. Shearing and special forms
3. Plant selection, placement and management
  - a. Good urban design and management
  - b. Species and cultivar selection
  - c. Selecting good nursery plants
  - d. Tree form and habit
4. Tree structure and strength
  - a. Branch orientations, unions, bark ridges and protection zones
  - b. Branch origins and stem attachments
  - c. Weak versus strong structure
5. Tree tissue and compartmentalization
  - a. Living and nonliving tissue
  - b. Compartmentalization of Decay in Trees (CODIT) model
  - c. Best management practices related to tree biology
6. Pruning cuts
  - a. Reduction, heading and removal cuts
  - b. Consequences of flush cuts and wound dressings
7. Pruning tools
  - a. Personal Protective Equipment (PPE)
  - b. Cutting tools and other equipment
  - c. IPM and GDD
    - i. Integrated Pest Management as it relates to arboriculture
    - ii. Growing Degree Days (GDD) and plant/insect phenology as they relate to arboriculture
8. Timing of pruning
  - a. Pruning cycles and growth rate control
  - b. Proper timing for deciduous and coniferous species
  - c. Pruning flowering, fruiting and small ornamental trees
9. Analysis and remediation of a portion of Canandaigua's young street trees

- a. On-site tour with resulting:
  - i. Report of species identification, requirements, growth rate, and maladies
  - ii. On-site remediation by pruning, weeding, stake/wire removal, etc.
- 10. Tree roots
  - a. Anatomical features and functions of woody and non-woody roots including mycorrhizae
  - b. Root pruning for transplanting and construction remediation
- 11. Transplanting trees and shrubs
  - a. Bare root, ball and burlap and container grown nursery stock
  - b. Post-planting care: staking, watering and mulching
- 12. Shrub pruning and care
- 13. Tree diagnosis
  - a. Standards and specifications- American National Standards Institute (ANSI) for the green industry
  - b. Tools used for diagnosis including Resistograph™ operation
- 14. Climbing exercise/Chipper operation demonstration