Date: January 2006

I. Course Name: Tree Culture & Maintenance
Course Prefix and Number: HRT 111
Credit Hours and Contact Hours: 3 credit hours - contact hours
Catalog Description:
(Course can be used as either a conservation or horticulture elective.) Designed for individuals who desire a knowledge of tree health, value assessment, pruning, cavity work, wound treatment, climbing, general repair of trees, techniques of fertilization and transplanting. Practical aspects and field experience are emphasized.

II. Course Outcomes and Objectives

Learning Outcomes: Following completion, the student should be able to:

1. Describe the interrelation of trees to landscape ecology and their effect on human well being.
2. Specifically, the student will learn the role that trees play in environmental site improvement, including: energy efficient design, noise abatement, pollution filtering, glare and heat reduction, and stress reduction value.
3. Understand and measure the components involved in determining the dollar value of a living tree in the landscape including its pre- and post-casualty condition; legal considerations.
4. Identify the tissue types of a tree and the role they play in tree function, growth and defense.
5. Demonstrate the impact that horticulture and tree care practices have on the health and vitality of tree tissue systems, both negative and positive effects.
6. Explain and identify the types of stress placed on trees growing in the landscape environment, including the effect of road salting, root restriction, wound injury, topping, compaction, thinning, and lightning damage.
7. Identify the nature and extent of CODIT (compartmentalization of decay in trees) especially in relation to wound repair and hazards.
8. Demonstrate a practical working knowledge of tree transplanting, fertilization, pruning and wound repair. Successfully use pruning equipment and demonstrate proper pruning procedures in smaller trees.

Relationship to Academic programs and curriculum:

Tree Maintenance is an elective course primarily for horticulture students but also can be used as an elective for conservation students. Since there are no prerequisites, this course may also benefit the general public in planning, care, and preservation of community and homeowner trees.

College competencies addressed by the course:

___x__ writing __x___ ethics/values

_____ oral communications	_____ citizenship
___x__ reading	__x___ global concerns
_____ mathematics	_____ information resources
___x_ problem-solving	__x___ professional competency
_____computer literacy	

III. Methods of Instruction

Types of Course materials:

The types of materials and equipment students will be exposed to include but is not limited to: shigometer, SPAD chlorophyll meter, chainsaws and protective gear, pole pruners, handsaws, resistograph, fertilization injection/infusion (Mauget, Arbotect, root inject), DBH tapes, freshly dissected trees, IKI testing, root care analysis probe, bark tracers, excision tools, microscope.

Methods of instruction:

Lecture
AV CD visuals
Demonstration charts/diagrams
Hands-on demonstration of equipment

Assessment measures:

a) Essay written exams
b) Evaluation of professional competency via class discussion/oral quiz
c) Evaluation of professional competency via observation of actual use of equipment and procedures
d) Competence in problem-solving via relating CODIT to tree hazard; assessment via diagrams and actual field evaluation
e) Professional competence in evaluating tree defects via photographic interpretation

Methods of Evaluation:

a) Letter grade
b) Oral quiz – S or U
c) Practical field quizzes – letter grade
d) Diagram accuracy – letter grade
e) Accuracy of identification – written response

IV. General Outline of Topics covered

1. The Tree – Man's Best Friend – An Introduction – Things Dad Never Told You About Trees
2. Scope of arborist activities
3. Some important practical facts about tree ecology, climate modification, function and structure
4. How to determine the dollar value of a living tree; legal implications
5. Pruning and tree surgery
6. Nutrient needs of trees
7. Tree fertilization
8. Compartmentalization
9. Tree preservation planning and techniques
10. Tree injuries / stress management
11. Hazardous tree evaluation and inventory
12. New technology
13. Practical field experience using techniques and equipment