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# Advanced Training Course Catalog

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The Illinois Arborist Association has developed a rigorous training program for Certified Arborists. The training program builds on the topics of the initial certification program and offers in-depth study including local details.

The courses offer practical study, laboratory work and field study as appropriate. Class size will often be limited, offering hands-on practice and access to the facilitators, specifically in the Tree Worker Domain.

Knowledge and skills will be assessed, and an exam will be given at the end of each course. Passing grades for each course module will be necessary to complete an entire curriculum or domain.

The four Advanced Training Domains are:

- Tree Site and Selection
- Pest Diagnosis and Management
- Tree Worker
- Urban Forestry

Illinois Arborist Association

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2020

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# Pest Diagnosis & Management (PDM)

Advanced Training modules and schedules for PDM Domain provide additional training in diagnosis of plant problems, pest identification and plant health care management strategies.

Course Name			Page Number
<b>Insect &amp; Mite Pests</b>	Required	10 Hours	6
<b>Tree Diseases</b>	Required	10 Hours	7
<b>Abiotic Problems</b>	Required	10 Hours	8
<b>Pesticide Safety &amp; Application</b>	Required		9
<b>Intro to Plant Health Care/IPM</b>	Elective	7.5 Hours	10
<b>Soil &amp; Nutrient Management</b>	Elective	7.5 Hours	11

# Tree Site & Selection (TSS)

Advanced Training modules and schedules for the TSS Domain provide additional training on proper plant selection, proper plant identification and knowledge of the site requirements.

Course Name			Page Number
<b>Summer Tree Identification</b>	Required	12 Hours	12
<b>Winter Tree Identification</b>	Required	12 Hours	13
<b>Species Requirements</b>	Required	8 Hours	14
<b>Planting Methods &amp; Selection</b>	Required	8 Hours	15
<b>Site Assessment &amp; Design Principles</b>	Elective	7.5 Hours	16
<b>Soil &amp; Nutrient Management</b>	Elective	7.5 Hours	17

## Tree Worker (TW)

Advanced Training modules for the TW Domain provide knowledge and skill, with emphasis on Safe Work Practices, on climbing techniques, rigging techniques, tree felling and tree & ornamental pruning.

Course Name			Student Instructor Ratio	Page Number
<b>Present Day Climbing - Level 1</b>	Required	12 Hours	6/1 or 12/2	18
<b>Present Day Rigging - Level 1</b>	Required	12 Hours	6/1 or 12/2	19-20
<b>Pruning</b>	Required	6.5 Hours	12/1	21
<b>Felling</b>	Required	6.5 Hours	6/1 or 12/2	22
<b>Aerial Rescue (Tree Rescue) Rope &amp; Harness</b>	Elective	6.5 Hours	6/1 or 12/2	23-24
<b>Cabling &amp; Bracing</b>	Elective	7 Hours		25
<b>Chainsaw Safety &amp; Operation</b>	Elective	6.5 Hours	6/1 or 12/2	26
<b>Climbing - Level 2 (Level 1 Prerequisite)</b>	Elective	12 Hours	6/1 or 12/2	27-28
<b>Rigging - Level 2 (Level 1 Prerequisite)</b>	Elective	12 Hours	6/1 or 12/2	29

## Urban Forestry (UF)

Advanced Training modules for the Urban Forestry (UF) domain are meant to provide participants with a specialized skill set for managing, assessing, and performing work on trees in a public setting. While we have a strong focus on public trees such as those in parks or on parkways and tree lawns, we also explore trees on private property and how the various local codes and ordinances affect trees, workers, and their interactions across the public/private interface.

Course Name			Page Number
<b>Urban Forestry Management Planning</b>	Required	8 Hours	30
<b>Tree Inventories: Options &amp; Applied Use</b>	Required	8 Hours	31
<b>Urban Settings, Species, Stresses &amp; Strategies</b>	Required	8 Hours	32
<b>Tree Regulations &amp; Legislative Concerns</b>	Required	8 Hours	33
<b>Tree Appraisals</b>	Required	12 Hours	34-35
<b>Public Relations &amp; Community Outreach</b>	Elective	8 Hours	36
<b>Tree Risk Management in Urban Environments</b>	Elective	8 Hours	37

# ***PDM - Insect and Mite Pests***

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## **Course Description**

The Insect and Mite Pests module will focus on insect and mite pests affecting woody landscape plants. Emphasis will be placed on pest identification, biology, population dynamics, and non-chemical and chemical management strategies. Students will be expected to have a working knowledge of basic insect biology, anatomy, and principles of integrated pest management (IPM) and/or plant health care (PHC). Riker mounts of pests and preserved specimens will be utilized in class. If during the field season, outdoor field studies will be conducted. A comprehensive final exam will be given at the end of the course and will be required in order to get Advanced Training credit for the module.

## **Equipment Requirements**

## **Recommended Reading**

1. *Insects that Feed on Trees and Shrubs: An Illustrated Practical Guide* by Howard H. Lyon and Warren T. Johnson

## **Provided Equipment**

## **Other Provided Equipment**

Hand lens, handouts and supplementary training materials, if available from NGO's.

# *PDM - Tree Diseases*

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## **Course Description**

The Tree Diseases module will provide an in-depth study of the common tree and woody plant diseases found throughout Illinois and surrounding areas. We will cover basic tree disease concepts, disease identification, life cycle and management and the plant diagnostic process. We will learn how to identify, understand and manage seventy-five (75) disease-causing pathogens such as fungi, bacteria and viruses. The following categories will be discussed: cankers, needle, wood decay, foliar, root rot and vascular wilt. We will become familiar with the following diagnostic tools: Increment borer, Kelway pH/moisture meter, soil compaction probe, and various small tools to aid in proper disease diagnosis. We will review the plant diagnostic process and the steps necessary for proper disease ID. We will also become familiar with the U of I Plant Clinic and the Morton Arboretum and the proper methods of submitting plant specimens for disease diagnosis. Materials will be covered through power point slides and field demonstrations. A 20-question multiple choice quiz will be given at the end of class.

## **Provided Equipment**

Increment borer, Kelway pH/moisture meter, soil compaction tester, cordless electric drill, pruning saws, hand pruners, pole pruners, shovel and various small soil probing tools.

## **Additional Recommended Reading**

1. *Diseases of Trees and Shrubs* by Wayne A. Sinclair
2. *Diseases of Trees in the Great Plains* is available online and can be downloaded for free at: [https://www.fs.usda.gov/nac/assets/documents/research/publications/rmrs\\_gtr335.pdf](https://www.fs.usda.gov/nac/assets/documents/research/publications/rmrs_gtr335.pdf)

## **Day One**

Begin the morning classroom session discussing various disease pathogens. A power point presentation of approximately 35 pathogens will be discussed. Live samples will also be provided for review. The afternoon session will consist of a field trip with “hands-on” disease ID and proper tool usage. We will put into practice the plant diagnostic process and the steps necessary for proper disease identification.

## **Day Two**

The morning classroom session will review an additional 35 pathogens via power point and live samples. The afternoon session will consist of another “hands – on” field trip discussing the remaining diseases and the diagnostic process necessary for proper ID.

## **Outcomes**

Upon completion of the Tree Disease module, each participant will gain knowledge of the following:

- Become familiar with the five major groups of plant pathogens
- Identify seventy-five common woody plant diseases of the Midwest
- Become familiar with the most common symptoms and signs of plant disease
- Become proficient in field diagnosis of several common woody plant diseases
- Become familiar with various tools to aid in disease diagnosis
- Learn proper methods for submitting plant samples to plant clinics in Illinois

# *PDM - Abiotic Problems*

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## **Course Description**

The Abiotic Problems module will provide an in-depth study of common abiotic stresses on trees and woody plants. We will discuss specific abiotic disorders associated with environmental conditions, nutrient deficiencies, chemical injury, animal and mechanical damage along with various other stresses people inflict on plants. We will also cover diagnostic skills needed to recognize these stresses and suggest remedies to correct, minimize or prevent these problems. We will discuss the importance of laboratory analysis of soil, water and tissue samples in properly diagnosing plant problems.

Weather permitting, outdoor sessions will be conducted, and case studies will provide hands on practice at diagnosing abiotic tree problems. During the outdoor sessions, we will also evaluate various signs and symptoms, site conditions and plant history, so that we can accurately identify the cause of the problem. Focus will be on the types of stresses that predispose trees to decline. Materials will be covered through power point slides and field case studies. A 50-point multiple choice test will be given at the end of class.

## **Recommended Reading**

1. Abiotic Disorders of Landscape Plants, A Diagnostic Guide, Lawrence R. Costello. Edward J. Perry, Nelda P. Matheny, J. Michael Henry, Pamela M. Geisel, 2003.
2. *Diseases of Trees in the Great Plains* and is available online and can be downloaded for free at: [https://www.fs.usda.gov/nac/assets/documents/research/publications/rmrs\\_gtr335.pdf](https://www.fs.usda.gov/nac/assets/documents/research/publications/rmrs_gtr335.pdf)

## **Outcomes**

Upon completion of the Abiotic Problems module each participant will gain knowledge of the following:

- A better understanding of common abiotic stresses on woody plants.
- The ability to differentiate between abiotic, biotic and look-a-like disorders.
- Skills essential to the diagnostic and decision-making process.
- A better understanding of tools to aid the arborist while diagnosing plant problems.



# ***PDM - Pesticide Safety & Application***

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## **Course Description**

This IAA Advanced Training Course will provide a comprehensive treatment on understanding pesticides and their modes of action, when and where pesticides should be implemented within a PHC program, how to understand labels and labeling, prevention of human pesticide poisoning, how pesticides affect the environment and how to minimize environmental impact and non-target organisms, safe handling of pesticides including storage and disposal, basic equipment calibration and calculating proper treatment rates, and a review of pesticide laws and regulations.

Additional emphasis will be placed on the application and proper use of systemic insecticides and application methods including, but not limited to, basal soil drench, soil injection, basal trunk sprays, trunk injections and granules for the management of insect pests affecting woody ornamental plants.

Completion of a comprehensive multiple-choice exam will be given at the end of the course in order to receive Advanced Training credit for the module.

## **Required Reading**

1. *Illinois Pesticide Applicator Training Manual* by University of Illinois-Extension and *Ornamentals Applicator Pesticide Training Manual* by University of Illinois-Extension.

## **Recommended Reading**

1. *Best Management Practices: Tree Injection* by Shawn Bernick and E. Thomas Smiley, Ph.D.

## **Outcomes**

Upon completion of this module, students will be better equipped and knowledgeable in the safe and effective use of pesticides and how they can be integrated into a comprehensive PHC management program. Students will gain knowledge of the following:

- pesticide safety for the applicator and environment;
- acceptable pesticide application and techniques within a PHC program;
- better understanding of pesticide modes of action and avoidance of pest resistance; and
- how pesticides impact beneficials especially pollinators and honeybee

# *PDM - Intro to Plant Health Care/IPM*

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The Intro to Plant Health Care/IPM module will provide an in-depth study of modern plant health care and integrated pest management. It is guided by the principal that the best way to manage insect and disease problems (pests) is a mixture of cultural, biological, chemical, mechanical, and sometimes regulatory means. The goal is to reduce pest populations or maintain them at a point where they cause minimal damage. It is an attempt to develop a more holistic approach, one that focuses on total plant health care and less on pest management. During the class, attendees will learn: 1) cultural practices that can be implemented to improve plant health; 2) how to monitor for pests and apply timely treatments; 3) how to use growing degree days, plant phenology, pheromone traps, and different tools and techniques for applying treatment. Materials will be covered through power point slides and field demonstrations. A 20-question multiple choice quiz will be given at the end of class.

## **Recommended Reading**

*IPM for Midwest Landscapes* is available online and can be downloaded for free at <http://www.entomology.umn.edu/cues/ipmbook.htm>

A second optional but recommended book is *Coincide: The Orton System of Pest and Disease Management* by Donald Orton.

## **Provided Equipment**

Shovel, Kelway pH/moisture meter, pocketknife, 10-15X hand lens, soil compaction tester, cordless electric drill, hand pruners, pruning saws, pole pruners and various small soil probing tools.

## **Day One**

Begin the morning session discussing PHC and IPM and how each plays a part in pest control. Discuss various methods available to manage and reduce disease and insect (pest) populations. Discuss the importance of key plants, monitoring and record keeping in a PHC program. We will review common site problems that lead to tree decline. An afternoon field trip will involve several “hands-on” cultural practices to reduce pest populations. I will demonstrate various tools and techniques to aid in the diagnosis of pest problems. We will study various planting sites and examine whether smart planning was involved (“right plant, right place”). We will also become familiar with various Illinois Plant Clinics and proper methods of submitting plant specimens for lab analysis.

## **Outcomes**

Upon completion of the Introduction to PHC/IPM module, each participant will gain knowledge of the following:

- A step-by step systematic approach that leads to a more thorough and accurate diagnosis in identifying plant problems
- Most efficient methods to minimize pest damage and improve plant health
- Learn to use growing degree days data for timely pest control
- Starch Reserve Testing of woody plant tissue to determine available carbohydrates
- Become familiar with the Orton System of Pest and Disease Management
- Discover the importance of identifying Key Plants in the landscape

# ***PDM - Soil & Nutrient Management***

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## **Course Description**

The Soil & Nutrient Management module will provide an in-depth study of Urban Trees. Soil quality is a primary concern for arborists since it directly impacts tree and shrub establishment, growth, health and life span. We will discuss the importance of high-quality soils along with proper soil management techniques. We will also discuss the “ideal soil” and its importance in root growth and stability, water and nutrient availability along with drainage and aeration.

Urban soils are consistently abused by human activities; some of the more common being compaction, improper irrigation methods, chemical and salt application. Proper soil assessment will help us identify soil conditions and limitations and steps necessary to modify these limitations to plant growth. A few soil modification steps discussed will include organic and inorganic amendments, adjusting pH, mulching and fertilization. A 20-question multiple choice quiz will be given at end of class.

## **Recommended Reading**

*Best Management Practices, Soil Management for Urban Trees*, ISA 2014  
*American National Standard – Tree, Shrub and Other Woody Plant Management – Standard Practices (Soil Management a. Modification, b. Fertilization, and c. Drainage)* (ANSI A300, Part 2) ISA 2011  
*Trees in the Urban Landscape*, Nina Bassuck, Peter Trowbridge, 2004

## **Provided Equipment**

Kelway pH/moisture meter; soil compaction tester; various small soil probing tools.

## **Day One**

During the morning session, we will discuss proper soil management as it pertains to modification, fertilization and drainage. Tree, site and soil assessment will be discussed as a means to improve plant establishment and long-term health. The afternoon session will be spent performing various site and soil assessments in the field. We will cover proper procedures for collecting soil nutrient samples.

## **Outcomes**

- Proper methods of soil assessment
- Proper methods of gathering soil samples
- A better understanding of tools and materials available for soil assessment

# *TSS - Summer Tree Identification*

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## **Course Description**

The Summer Tree Identification module will provide an in-depth study of several significant tree species found in Illinois. The primary focus will be on leaf morphology, complexity, and arrangement on both deciduous and coniferous trees. This is one of the most important means of identification because of the many characters available for observation and comparison.

Identification based on bud, stem, bark and fruit/seed characteristics will also be covered since they are important features necessary to complete a thorough summer Identification.

Classes will consist of an indoor study session and an outdoor observation period where specific examples of trees studied in the classroom will be examined. Over 75 different tree species (deciduous and evergreen) will be studied during the course. A 20-question multiple choice quiz will be given at the end of class.

## **Recommended Reading**

*Manual of Woody Landscape Plants*, Michael A. Dirr, 1998

## **Provided Equipment**

Pocket knife, 10-15X hand lens, hand pruners, pruning saws, and pole pruners

## **Day One**

During the morning session, we will review plant taxonomy, nomenclature and morphology. We will also discuss approximately 35 tree species via a PowerPoint presentation. Matching live samples will also be available to help ID the different species. The afternoon session will consist of a “hands-on” field trip to put your ID skills into practice.

## **Day Two**

The morning classroom session will review an additional 40 tree species via PowerPoint presentation. The afternoon session will consist of another “hands-on” field trip to identify the remaining species.

## **Outcomes**

The arborist will become proficient in recognizing various plant features that will greatly improve their ID skills, especially during the summer period.

# *TSS - Winter Tree Identification*

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## **Course Description**

The Winter Tree Identification module will provide an in-depth study of several significant tree species found in Illinois. Identification based on bud, stem, bark and fruit/seed characteristics will be the primary focus for each tree species studied. We will also cover other features important for winter ID, such as tree branching patterns, overall form, even taste and smell. Keen observation skills are necessary for plant ID during the dormant period. Once accomplished attendees will realize that the dormant period provides a more accurate and reliable season to identify tree species. Classes will consist of an indoor study session and an outdoor observation period where specific examples of trees studied in the classroom will be examined. Over 75 different tree species (deciduous and evergreen) will be studied during the course. A 20-question multiple choice quiz will be given at the end of class.

## **Recommended Reading**

*Fruit Key and Twig Key to Trees and Shrubs*, William M. Harlow, 1946  
*Woody Plants in Winter*, Earl L. Core & Nelle P. Ammons, West Virginia University, 1958

## **Provided Equipment**

Pocket knife, 10-15X hand lens, hand pruners, pruning saws and pole pruners.

## **Day One**

During the morning session, we will review plant taxonomy, nomenclature and morphology. We will also discuss approximately 35 tree species via a PowerPoint presentation. Matching live samples will also be available to help ID the different species. The afternoon session will consist of “hands-on” field trip to put your ID skills into practice.

## **Day Two**

The morning classroom session will review an additional 40 tree species via PowerPoint presentation, along with live samples. The afternoon session will consist of another “hands-on” field trip to ID the remaining species.

## **Outcomes**

The arborist will become proficient in recognizing various plant features that will greatly improve their ID skills, especially during the dormant period.

# *TSS - Species Requirements*

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## **Course Description**

The Species Requirements module will focus on biotic and abiotic requirements of various tree species, and specifically species tolerances to adverse conditions. The course will be broken down into 2 classes. These classes will focus on the science behind tree requirements and tolerances such as light, nutrients, salts, soils, and pH (among others) and provide examples of tree species best suited to cope with these various situations.

Weather depending, there will also be a short field component of this class, where students will be tested on which sites would be suitable for specific trees. This class will provide information for all types of planting areas, not just parkways, in order to teach a broader perspective on these tree species. We will discuss the biological, evolutionary, and chemical reasons why certain trees prefer certain conditions, as well as where these conditions are likely to be found in Illinois.

## **Recommended Reading**

*Flora of the Chicago Region*, Gerould Wilhelm, Laura Rericha, 2017  
*Manual of Woody Landscape Plants*, Michael A. Dirr, 1998

## **Provided Equipment**

None

## **Day One**

During the first session we will review sun and shade adaptations, and the science behind photosynthesis. We will also review adaptations to saturated and dry soils, and where in the built and natural environments one is likely to encounter these conditions. We will also discuss ecology and urban ecology, and the biotic and abiotic factors that make up each. As each of these sections is discussed, we will discuss trees that are uniquely adapted to changing light and soil moisture conditions.

## **Day Two**

During the second session, we will review adaptations to various soil conditions such as nutrient and salt loading, soil pH, and soil texture. We will also discuss some other “wildcard” conditions that are unique to the urban environment, such as airborne pollutants, vandalism, and heavily engineered sites. Once again, along the way, we will discuss specific trees which are suited to these various situations. Weather depending, we will conclude each class with a walk around the local environs to discuss what trees would be appropriate for various sites.

## **Outcomes**

The goal is to educate students on how to make a long-term and fiscally responsible investment in trees by choosing the right tree for the right site and avoiding common pitfalls of planning for tree plantings.

# ***TSS - Planting Methods & Selection***

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## **Course Description**

The Planting Methods & Selection module will focus on the various tree planting methods, and which is appropriate for specific projects. The course will be broken down into 2 classes. The course will focus on planting trees which have been produced and packaged by the nursery in a variety of ways (bare root, B&B, containerized, etc.).

We will examine the advantages and disadvantages of each, as well as the specifics of site preparation, installation technique, and post-installation maintenance for each differing planting method. We will also learn about how nurseries produce plants, and some of the things to be aware of when writing or reading planting specifications. The class will culminate with a hands-on tree planting, using the techniques we have learned.

## **Recommended Reading**

*The Practical Science of Planting Trees*, Gary Watson, E.B. Himelick, 2013  
*ANSI Z60.1 Standards*, American National Standards Institute, 2014

## **Provided Equipment**

Various planting tools

## **Day One**

During the first session we will discuss the planning process, and how to select appropriate planting methods based on the site you will be dealing with. We will review the science of site selection and selecting the right tree for the right site, as well as testing tools available for determining what tree to plant. We will also discuss the ANSI Z60.1 standard for nursery production, and examine the various nursery production methods, and pros and cons of each, and how they impact the final planting decision. We will also discuss how to select and evaluate nursery stock. Finally, we discuss how written specifications are important in determining the outcomes of planting.

## **Day Two**

During the second session, we will discuss the physical planting of trees, and methods for each type of nursery production. We will discuss some often overlooked concepts, like transportation to the site, and sourcing trees close to the job site, as well as hole prep, what to do with packaging materials, and the merits of pruning, fertilization, watering, and aftercare. We will also discuss the concepts of street tree planting, and how to manage homeowners in the public Right of Way planting process. We will finish the class by planting several trees, using both a containerized and a balled and burlapped method.

## **Outcomes**

Our goal is to help educate students on the vast array of options available to them when it comes to selecting and installing trees on various projects they may encounter, in order to promote using the right technique for the right situation, leading to long term survivorship and reduced risk.

# ***TSS - Site Assessment & Design Principles***

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## **Course Description**

The Site Assessment & Design Principles will provide an in-depth study of the urban landscape. This course will focus on proper site assessment, plant selection and design principles, “Right Tree/Right Place/No Place”. We will assess current site conditions; evaluate existing plants and discuss steps to modify the planting design when appropriate. We will discuss climate, microclimates and structural factors, including limitations to both above and below ground spaces. Soil compaction, drainage areas and aeration will be discussed as they relate to a successful landscape design. We will also review various site sketch plans and note their importance to a successful design. A 20-question multiple choice quiz will be given at end of class.

## **Recommended Reading**

*Trees in the Urban Landscape*, Nina Bassuck, Peter Trowbridge, 2004

## **Provided Equipment**

Kelway pH/ Moisture Meter, soil compaction tester, shovels, basic site sketch materials

## **Day One**

During the morning session, we will discuss proper site assessment, plant selection and design (simple site sketches). This session will involve PowerPoint demonstrations and various handouts. The afternoon session will be spent in the field performing visual site assessments. We will cover the Site Assessment Checklist and perform simple site sketches. Group discussion will be encouraged.

## **Outcomes**

Become familiar with steps to proper site assessment. Become proficient with “hands-on” simple site sketches.



# ***TSS - Soil & Nutrient Management***

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## **Course Description**

The Soil & Nutrient Management module will provide an in-depth study of Urban Trees. Soil quality is a primary concern for arborists since it directly impacts tree and shrub establishment, growth, health and life span. We will discuss the importance of high-quality soils along with proper soil management techniques. We will also discuss the “ideal soil” and its importance in root growth and stability, water and nutrient availability along with drainage and aeration.

Urban soils are consistently abused by human activities; some of the more common being compaction, improper irrigation methods, chemical and salt application. Proper soil assessment will help us identify soil conditions and limitations and steps necessary to modify these limitations to plant growth. A few soil modification steps discussed will include organic and inorganic amendments, adjusting pH, mulching and fertilization. A 20-question multiple choice quiz will be given at end of class.

## **Recommended Reading**

*Best Management Practices, Soil Management for Urban Trees*, ISA 2021  
*American National Standard – Tree, Shrub and Other Woody Plant Management – Standard Practices (Soil Management a. Modification, b. Fertilization, and c. Drainage)* (ANSI A300, Part 2) ISA 2011  
*Trees in the Urban Landscape*, Nina Bassuck, Peter Trowbridge, 2004

## **Provided Equipment**

Kelway pH/moisture meter; soil compaction tester; various small soil probing tools.

## **Day One**

During the morning session, we will discuss proper soil management as it pertains to modification, fertilization and drainage. Tree, site and soil assessment will be discussed as a means to improve plant establishment and long-term health. The afternoon session will be spent performing various site and soil assessments in the field. We will cover proper procedures for collecting soil nutrient samples.

## **Outcomes**

- Proper methods of soil assessment
- Proper methods of gathering soil samples
- A better understanding of tools and materials available for soil assessment

# ***TW - Present Day Climbing - Level 1***

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## **Course Description**

This is a 2-day module designed to show and demonstrate how to properly use the latest climbing tools and techniques. This is a 'hands-on' course. All attendees will perform a climbing gear inspection, learn to tie 5 essential climbing knots, assess the tree for risk, install a climbing rope, ascend into the tree using a 'moving rope system', advance the rope, limb walk and descend.

## **Equipment Requirements**

Climbing style helmet, with chin strap, that meets the ANSI Z89.1 Standard

Eye protection that meets the ANSI Z87.1 Standard

Work boots suitable for tree climbing, covering and supporting the ankle

Arborist work positioning harness meeting industry Standards

Arborist work positioning lanyard meeting industry Standards

Arborist climbing rope, 120' minimum length, that meets the ANSI Z133-2017 Standard

Connecting links, carabiners and locking snaps, that meet the ANSI Z133-2017 Standard

Eye and eye friction hitch cord that meets the ANSI Z133-2017 Standard

## **Optional Equipment**

1. Throwline and shot pouch
2. Micro pulley for fair leading slack tending
3. Foot ascender
4. False crotch (cambium saver)

## **Day One**

Meet on site. Have all Instructors and attendees introduce themselves. As a group go over (1) arborist climbing ropes and rope fibers, explaining what Standards must be met, and the advantages & limitations of each, (2) arborist climbing hardware (carabiners & locking snaps, explaining what Standards must be met, and the advantages and limitations of each, (3) work positioning harness and what Standards must be present on the harness, (4) work positioning lanyard and what Standards must be met. . . The Instructors will demonstrate how to inspect each of those components to determine they are Safe to use. . . The following knots will be demonstrated, explained why we use them, and tied by all (1) stationary bowline, (2) barrel knot, (3) anchor hitch, (4) Valdotaire Tresse [VT], (5) figure of eight knot. . . The Instructors will demonstrate and preform the following (1) tree risk assessment, to determine if the tree is safe to climb, (2) throwline use and how to use it to install a climbing rope, (3) donning a work positioning harness, (4) ascending into the tree, staying 'tied in' at all times, (5) advancing the climbing rope, using a work positioning lanyard, to stay secured, at all times, (6) choosing a final 'tie in point' [TIP], (7) descending to the ground. . . All attendees will have the opportunity to set their climbing rope, ascend into a tree, and advance their climbing rope. . . End with a question-and-answer session.

## **Day Two**

Review all knots and continue climbing with Instructor coaching. A practical (skills) exam will be given to all attendees. The exam consists of tying the 5 knots and performing a 2-station climb that has a designated tie in point, a short limb walk, and longer 'limb walk' stations.

## **Outcomes**

Upon completion of the Climbing Level module, each attendee will gain the knowledge of, or be able to perform the following tasks, with emphasis on Climbing Safety:

- Tree Risk Assessment
- Tying the 5 knots listed
- Climbing gear inspection
- Choosing a proper branch union for ascending
- Ascending a tree, staying 'tied-in' at all times
- Choosing a final tie-in-point
- Limb walking
- Descending

# ***TW - Present Day Rigging - Level 1***

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## **Course Description**

This is a 2-day module designed for the 'entry' level arborist, but arborists with rigging skills are welcome to attend. This is a 'hands-on' course. This course is for the arborists who have minimal rigging training and want to learn more about (1) rigging ropes, their constructions and fibers, (2) arborist blocks, their advantages and limitations, (3) rescue pulleys and what they are designed for, (4) spliced eye slings for anchoring pulleys and rope friction devices, (5) rope friction devices and their advantages and limitations, (6) rope tools, such as whoopie slings, loopie slings, pocket slings, and ring slings, and safely use them. We will be using a truck mounted aerial lift, so experience using this equipment is required. A demonstration of a thorough 'tree risk assessment', to check for structural integrity, making sure the tree can withstand the forces being applied. Going over the different constructions of synthetic rope, and the advantages and limitations of each construction, will be demonstrated. Tying arborist approved knots and hitches for installing a pulley, rope friction device and lowering limbs and trunk wood. Understanding knot strength loss and the advantages of spliced goods. The demonstration and use of arborist blocks (Pulleys) for lowering wood, re-directing the lowering line to a "drop zone", rope friction devices for lowering wood, building mechanical advantage system for lifting and open face notches.

All attendees will have the opportunity to install an arborist block, install the lowering line into the block, tie off a limb, cut an open face notch and cut the limb off.

An aerial lift truck will be on site for use. A full body harness, size Large, will be on site for use. Please bring your own full body harness if you wear other than a size Large or prefer to wear your own.

## **Equipment Requirements**

1. Climbing style head protection that meets the ANSI Z89.1 standard
2. Eye protection that meets the ANSI Z87.1 standard
3. Work boots suitable for tree climbing (covering the ankle)
4. Hearing protection for chainsaw and chipper use
5. Leather gloves for lowering

## **Provided Equipment**

1. Aerial lift truck
2. Full body harness with a rated dorsal attachment, size large
3. Deceleration lanyard for the full body harness
4. One pair of chainsaw chaps
5. All rigging equipment (ropes, pulleys, slings, rope friction devices)
6. All chainsaws (14", 18", 24")

## **Day One**

Meet in a classroom for 2 hours for introduction and a Power Point presentation. Drive to the site for demonstrations and participation. Go over knots and rope, pulleys (arborist, rescue), slings, rope friction devices, tree risk assessment, and then actual rigging from the aerial lift truck.

## **Day Two**

Continue with limb rigging, mechanical advantage systems, rigging spar wood off itself (drop-hitching) and spar notching & dropping (felling).

There will be a Practical test at the end. The test will consist of tying the following knots: Stationary bowline; Running bowline; Clove hitch locked with 2 half hitches; Cow hitch; Timber hitch.

# ***TW - Present Day Rigging Level 1, Continued***

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## **Outcomes**

Upon completion of the Rigging Level 1 module, each participant will gain knowledge of or be able to perform the following tasks, with emphasis on Safety.

- Basic Tree Risk Assessment
- Rope tensile strength's
- Know the difference between a rescue pulley and arborist block
- Tying all the knots listed above
- Proper pulley placement in the tree
- Anchoring a rope friction device (Port-a-wrap, etc.) near the base of the tree, and how to safely use the device
- Proper knot selection to the lower wood
- Cutting a notch and back cut
- Lowering wood with a rope friction device

# *TW - Pruning*

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## **Course Description**

This is a “hands-on” class. All class participants will be cutting woody plants using the following arborist tools: handsaw, pole saw, pole pruner, hand pruner and loppers. This class will focus on the proper pruning of shade trees and ornamentals, following the ANSI A300 Standard-Part 1. The difference between pruning a shade tree and an ornamental will be demonstrated. A pruning “collar cut” will be demonstrated, showing the proper angle of the cut that will promote the health, vigor and wound sealing of the plant. The instructor will explain using the proper tool for the task at hand. The removal of deadwood, thinning of interfering or rubbing limbs, water sprout thinning/removal and basal sprout removal will all be covered. A handout listing pruning time frames will be distributed (ex. American elm and oak pruning shall be done during the non-growing season). The different pruning terms will be reviewed, and some will be demonstrated, i.e.; crown raising, crown thinning, subordinate pruning.

## **Equipment Requirements**

- Head protection that meets ANSI Z89 standards
- Eye protection that meets ANSI Z87 standards work boots that cover the ankle
- Handsaw w/scabbard

## **Optional Equipment**

Hand pruner, lopper, pole saw, pole pruner.

## **Provided Equipment**

Sectional pole saw and pole pruner (Marvin PH4 head), hand pruner and loppers

## **Day One**

Meet on site. Explain the objectives for this class. Review the ‘Branch Bark Ridge’ and demonstrate proper collar cuts on shade trees and ornamentals. Demonstrate the “3 cut” technique on larger limbs. Demonstrate the use of a handsaw, pole saw, pole pruner, hand pruner and lopper. Proceed onto the “hands-on” portion of the class for the rest of the day, using all of the provided tools. There will be a practical test at the end of the day. Each participant will prune a small tree or ornamental from the ground and be graded on their pruning quality and pruning cuts.

## **Outcomes**

Upon completion of the Pruning module, each participant will gain the knowledge of, or be able to perform the following tasks:

- Identify the “Branch Bark Ridge”
- Know how to use a handsaw, hand pruner, pole saw, pole pruner and lopper
- Prune trees and ornamentals according to the ANSI A300 Standards
- Make proper pruning cuts
- Identify crossing, interfering and weak limbs
- Identify weak branch unions and how to reduce weight to help prevent breakage
- Directional pruning
- Subordinate pruning

# TW - Felling

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## Course Description

Statistics have indicated that tree felling is “the single, most dangerous act” performed by an arborist. This course is designed to drastically reduce the chance of an incident occurring while felling a tree, with heightened safety and situational awareness. The six (6) step precision felling plan is explained and demonstrated in detail. A thorough tree risk assessment is demonstrated to detect any hazards and defects before the felling operation begins. We will explain and demonstrate the “Command and Response” system for Tree Care Operations. The use of non-metallic felling wedges is demonstrated to help prevent “sit-back” and steer the tree into the drop zone. The use of a tag line and using mechanical advantage to safely drop a backward leaning tree is demonstrated. Notch placement inside leaning trees is demonstrated to fell a tree in the designated drop zone. To help prevent “barber chairing”, the plunge (bore) cutting technique is explained and demonstrated on forward leaning trees. Each participant is given the opportunity to fell a tree in a designated “drop zone”, while explaining each step of the felling plan as it is happening. Chainsaw experience is a plus for this course.

## Equipment Requirements

- Head protection that meets the ANSI Z89 Standard
- Eye protection that meets the ANSI Z87 Standard
- Hearing protection that meets the ANSI Z133-2017 standard
- Cut-resistant leg protection that meets the ANSI Z133-2017 Standard
- Approved boots that cover the ankle
- Gloves appropriate for Tree Care Operations

## Provided Equipment

Gasoline powered chainsaws (18”, 24”, and 28”). Tag lines, felling wedges, axe for driving wedges, mechanical advantage kit w/anchoring system.

## Day One

Meet on site. Go over a briefing of the day’s course with the group. Explain and demonstrate a thorough “Tree Risk Assessment” of the tree to be felled. Explain and demonstrate the “Command and Response” system. Explain and demonstrate the six (6) step precision felling plan while actually felling a tree. Demonstrate and actually use a 5 to 1 mechanical advantage system to pull over a backward leaning tree. Each participant will then fell a tree while explaining the 6-step felling plan to the group and be graded on the explanation and performance of their felling.

## Outcomes

Upon the completion of the Felling course, each participant will gain the knowledge of, or able to perform the following tasks, with safety being the primary objective:

- A thorough “Tree Risk Assessment”
- The six (6) step precision felling plan (handout)
- Tag line placement in the crown of the tree, prior to felling
- Using a 5 to 1 mechanical advantage system for pulling
- Cutting an open face notch
- Plunge (bore) cutting a back cut
- Use of felling wedges
- Command and Response System

# ***TW - Aerial Rescue (Tree Rescue) Rope & Harness***

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## **Aerial Rescue / Tree Rescue Facts**

The arborist industry is the only industry in the world that uses a Doubled Rope Technique (DdRT) for work at height? When Fire/Rescue is called to bring down an injured climber and if they can't get to the victim with their ladder truck, it takes them an average time of 2.5 to 3 hours to get the injured climber safely to the ground, because they don't know how to access the injured climber in the tree. YOU CAN HELP SAVE A LIFE!

## **Course Description**

This is a hands-on course and will show the different rescue techniques available to the climbing arborist. We will go through the Aerial Rescue Flowchart in the ANSI Z133-2017 step by step to help determine the correct sequence to take when a rescue is needed. The rescue techniques demonstrated are:

- Double climbing hitch method (the safest method) when both the rescuer and patient descend on their own climbing system
- "D" ring rescue. The victim's rope and/or harness is compromised, both the rescuer and patient descend on the rescuers climbing system.
- Pulley rescue. The victim is lowered from a pre-installed life support pulley and rope friction device/mechanical descender that they were working from.
- Bucket rescue. The rescuer has no climbing experience but knows how to operate an aerial lift, which is on site. The rescuer positions the aerial lift in the appropriate location to facilitate a rescue and works the patients climbing hitch and lowers the aerial lift simultaneously.
- Spar rescue (the most time-consuming rescue). The climber suffers an injury while cutting from a spar. There are no lateral limbs or stubs to tie into. The rescuer climbs the spar to the patient, installs a false crotch for their climbing system and lowers the patient from the false crotch.

Each attendee will have the chance to perform a "Double Climbing Hitch Rescue" from a height of 25 feet.

## **Equipment Requirements**

(1) Head protection that meets the ANSI Z89 Standard (2) Eye protection that meets the ANSI Z87 Standard (3) Work boots that cover the ankle (4) Work positioning harness (5) Work positioning lanyard (6) Climbing rope that meets the ANSI-2017 Standard

## **Provided Equipment**

(1) Aerial lift truck (2) Necessary equipment to perform the above rescues (3) climbing spurs with pole gaffs

# ***TW - Aerial Rescue (Tree Rescue) Rope & Harness, Continued***

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## **Day One**

Meet on site. Introduce each other. Go over a briefing of the day's course with the group. Distribute the handouts. Demonstrate a "Double Friction Hitch" rescue technique. Have the attendees perform a "Double friction hitch" rescue technique. Demonstrate only the remaining 4 rescue techniques, going over the advantages and limitations of each method. Each participant will be graded on their individual performance on the rescue protocol and technique.

## **Outcomes**

Upon completion of the Aerial Rescue course, each participant will gain the knowledge of (1) what hazards to look for in an aerial rescue (2) the ANSI Z133-2017 Aerial Rescue Flowchart {the proper sequence of steps to take to make a rescue happen} (3) actually performing a rescue, bringing a mock injured climber down from a height of 25 feet (4) how to perform the other 4 rescue techniques.



# ***TW - Cabling & Bracing (Supplemental Support Systems)***

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## **Course Description**

This course will show and demonstrate the installation of hardware and EHS cable to help weak, compromised and at-risk limbs to help reduce the risk of limb or tree failure. We will be following the ANSI A300 Standard (Part 3) Supplemental Support Systems for cable/bracing, going over in detail, when it is appropriate to use J lags, when to switch to eye bolts and through hardware, and the advantages and limitations of each. This is a hands-on course where we will actually install a J lag or eyebolt (or both) and static cabling system, using EHS cable, to help support a compromised branch union. Proper tensioning techniques will be demonstrated using a come-a-long and Havens grip. We then will install a bracing rod in a compromised branch union to help support and prevent it from splitting.

## **Equipment Requirements**

- Hard hat that meets the ANSI Z89 standards
- Eye protection that meets the ANSI Z87 standards
- Work boots that cover the ankle

## **Provided Equipment**

- All the necessary cabling and bracing gear
- Cordless drill and bits for J lags and eye bolts
- Gasoline powered drill and bit for the through rod
- Aerial lift truck

## **Day One**

Meet in a classroom for introductions, a one-hour Power Point presentation and a display of the variety of cabling and bracing hardware, and the tools required to install them. Then meet outdoors at the site to perform a:

1. Job briefing
2. Tree risk assessment
3. Install a support system, simple direct cable
4. Install a bracing system using the appropriate size rod

We will demonstrate using the proper size drill bit for the appropriate anchor, J lag or eyebolt. The support system will be installed using a come-along for tensioning. The bracing rod will be installed using galvanized rod, round washers and hex nuts. The ends of the rod will be peened over to prevent the nuts from unthreading.

# ***TW - Chainsaw Safety & Operation***

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## **Course Description**

This is a hands-on course, designed for those with little experience, or those that have never had any professional training on the safe operation of a gasoline powered chainsaw. Having some chainsaw cutting experience is required. We will demonstrate and go over the following:

- The Safety features built into a chainsaw
- The 4 reactive forces of a rotating chain
- Rotational kickback
- Inertia and manually activated chain brake
- Proper starting procedures
- Proper cutting procedures
- Bore/plunge cutting
- Basic maintenance
- Hand sharpening using a round file

## **Equipment Requirements**

- Head protection meeting the ANSI Z89 standard
- Eye protection meeting the Z87 standard
- Hearing protection meeting the Z133-2017 standard
- Leg protection meeting the ANSI Z133-2017 standard, that comes down to the ankle
- Work boots, covering the ankle and giving ankle support

## **Provided Equipment**

- 14" top handled chainsaw
- 18" chainsaw
- 24" chainsaw

## **Day One**

Meet in a classroom for introductions, briefing and a 1 hour Power Point Presentation. Then out to the site to go over the Safety features, the 4 Reactive Forces of a rotating chain, and then a rotational kickback demonstration. The following will be demonstrated, and all participants will have the opportunity to do: (1) Proper starting techniques; (2) Proper cutting stance and techniques; (3) Proper hand grip; (4) Bore/plunge cutting; (5) Basic maintenance and hand sharpening.

## **Outcomes**

Upon completion of the Chainsaw Safety and Operation course, the participant will gain knowledge of and be exposed to the built-in safety features and the 4 reactive forces of a rotating chain. How incredibly fast rotational kickback occurs and how to avoid it from happening by placing the chainsaw to the right of the body when cutting. The proper starting and cutting techniques of a chainsaw. Basic maintenance including air filter cleaning, changing the drive sprocket, re-surfacing the guide bar and hand sharpening.

# ***TW - Present Day Climbing Level 2***

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## **Course Description**

This 2-day module is a continuation of the Level 1 module. This is also a “hands-on” course. Ascending a single rope, using mechanical ascenders backed up by a prusik hitch, will be demonstrated. This is an energy conserving method of ascension. Using re-directs, double crotching, foot ascenders, chest ascenders, knee ascenders, advancing the climbing line with a shot pouch and work positioning lanyard tricks will be demonstrated.

## **Equipment Requirements**

- Climbing style helmet that meets the ANSI Z89.1 Standard
- Eye protection that meets the ANSI Z87.1 Standard
- Work boots suitable for climbing trees (covering the ankle)
- Work positioning harness suitable for tree climbing
- Work positioning lanyard suitable for tree climbing
- Climbing rope 120’ minimum that meets the ANSI Z133-2017 Standard, with a locking rope snap or double locking carabiner
- Split tail or eye & eye hitch cord with a locking snap or double locking carabiner

## **Optional Equipment**

- Foot ascender
- Chest harness and ascender
- Re-direct that meets the ANSI Z133-2017 Standard

## **Provided Equipment**

- Aerial lift truck
- All necessary gear to ascend single rope and climb doubled rope

## **Day One**

Meet on site for introductions and review the course game plan and objectives with emphasis on Safety. Review the basic knots and hitches from Present Day Climbing with the addition of the VT (Valdotain Tresse), girth hitch, alpine butterfly and a retrievable re-direct hitch.

Demonstrate and perform the following: (1) A tree risk assessment of the working tree; (2) Set a climbing line using a throwline and shot pouch; (3) Anchoring the rope near the base of the tree with a port-a-wrap and prusik back-up; (4) a Single Rope Ascent using ascenders with a prusik backup; (5) Going over the forces change from 1X to 2X when using a rope anchored near the base; (6) Using a re-direct. Have all participants ascend the single rope using the ascenders and prusik backup and work off the single rope using a Doubled Rope Technique anchored to the single rope. Work the crown using re-directs.

## **Day Two**

Continue with the ascending and climbing techniques from Day 1. Participants will be graded on performance while ascending and working the tree. There will be a practical exam at the end of the day tying the following knots: (1) VT; (2) Alpine Butterfly; (3) Girth Hitch; (4) Retrievable re-direct hitch.

Questions & Answers

# ***TW - Present Day Climbing Level 2, Continued***

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## **Outcomes**

Upon completion of the Climbing Level 2 module, each participant will gain the knowledge of tying the above knots and hitches; be able to set-up a single rope for ascending and working the tree; use of foot and chest ascenders, knowing their advantages and limitations; setting a non-retrievable and a retrievable re-direct and knowing the force changes from a Doubled Rope Technique climbing system, to a Single Rope Technique.

# ***TW - Present Day Rigging Level 2***

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## **Course Description**

This is a two-day Module designed to compliment the Level 1 Module. As in Level 1, this is a hands-on class. We will be demonstrating and using advanced rigging techniques such as:

- Static retrievable false crotch
- Fish pole technique
- Load transfer rigging set up
- GRCS (Good Rigging Control System) for hoisting a 1,000 lb. or more log
- Tip tie, butt tie technique
- Balancing, using spider legs
- Double Whip Tackle (DWT)
- Setting up a mechanical advantage system (4 to 1 and 5 to 1)

We will be using the same knots and hitches learned in Level 1, along with more Port-a-wrap use. All participants will have the opportunity to set blocks and tie off limbs using the Level 2 techniques.

An aerial lift will be on site for use. A full body harness, size large, will be on site for use. Please bring your own full body harness.

## **Equipment Requirements**

- Climbing style head protection that meets the ANSI Z89.1 standard
- Eye protection that meets the ANSI Z87.1 standard
- Work boots suitable for tree climbing (covering the ankle)
- Hearing protection for chainsaw and chipper use
- Leather gloves for lowering
- Chainsaw chaps

## **Provided Equipment**

- Aerial lift truck
- Full body harness with a rated dorsal attachment, size Large
- Deceleration lanyard for the full body harness
- One pair of chainsaw chaps
- All rigging equipment (ropes, pulleys, slings, rope friction devices, GRCS)
- All chainsaws (14", 18", 24")

## **Day One**

Meet on site for introductions and job briefing. After that, we will perform a tree risk assessment. The tree will dictate which advanced techniques will be used, but all will be demonstrated during the course of the 2 days. Pulley placement, to help use the trees structure to the riggers advantage will be demonstrated. All will get the opportunity to set rigging and remove at least 1 limb.

## **Day Two**

Continue with class participation removing the tree using the more advanced rigging techniques. Each participant will be evaluated on his/her rigging.

## **Outcomes**

Upon completion of the Rigging Level 2 module, each participant will gain knowledge of and be exposed to the rigging techniques in the "description" portion of this document. The bullets listed will all be demonstrated and used. There may be others, if the tree dictates using them.

# *UF - Urban Forestry Management Planning*

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## **Course Description**

This Advanced Training class will focus on the creation and implementation of an Urban Forestry Management Plan (UFMP) for public and private entities, or tree managers of any kind. Specifically, we will focus on the following topics:

- Creating a Needs Assessment for your organization
- Standards and BMPs that should be referenced by the UFMP
- Reviewing existing UFMPs for forward-thinking policies
- Drafting an outline of the management plan and its objectives
- Holding a comment period for the public or other stakeholders
- Final creation of the Plan, including goals and penalties for noncompliance
- Drafting supporting ordinances or bylaws to support the goals of the UFMP

## **Recommended Reading**

*Urban Forestry: Planning and Managing Urban Greenspaces*, Robert W. Miller, Richard W. Hauer, Les P. Werner, 2015  
*Planning the Urban Forest*, James Schwab, 2009

## **Provided Equipment**

None

## **Day One**

This 1-day class will be predominantly classroom based and will rely upon a combination of lecture and group exercises. Materials utilized will include review of existing Urban Forestry Management Plans, as well as several Municipal Codes and other similar organizational supporting language concerning trees. A broad range of tree-related topics will be covered including tree planting, trimming and removal, risk related policies, chemical treatments, budget projections, equipment and personnel capacity, and preparation of bid specifications, among other topics. Students will be assessed based on a written exam for their comprehension of the subject matter. Heavy emphasis will be placed on classroom participation to discuss specific challenges each student faces, and how a Management Plan can address each situation.

## **Outcomes**

Upon completion of the course, the participants should be able to judge what types of management planning would most benefit their organization(s), how to begin the process of public outreach and data gathering, how to draft and edit a plan, and how to process data for such a plan. Participants are also expected to have an understanding of the various strategies, and how different organizations require different strategies.

# *UF - Tree Inventories: Options & Applied Use*

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## **Course Description**

This 1 day course will provide participants with a general overview of the mechanics of how to perform a tree inventory, data analysis basics, considerations before undertaking a tree inventory, the various types and goals of a tree inventory, and what to do with the data once it has been collected. What will NOT be discussed are specific software companies or vendors who perform this work, in order to avoid conflict of interest on behalf of the instructors.

Many times, those who require a tree inventory are lost in a sea of information and are not sure what exactly they need. Likewise, those seeking to perform rudimentary tree inventories may not be sure what data is important to collect, and how to collect it. This course seeks to clear these things up, so that tree managers have better understanding of the various data that can be collected during an inventory and how that data affects long term management, and practitioners can gain a better understanding of how their collection and analysis methodologies may impact project success.

## **Recommended Reading**

*ISA Best Management Practices – Tree Inventories, 2013*

## **Provided Equipment**

None

## **Day One**

This 1-day class will be predominantly classroom based and will rely upon a combination of lecture and group exercises. We begin by introducing basic types of tree inventory, and when each type is appropriate. We then explore the various data that can be collected, such as species, DBH, maintenance, and others, and how the format of each data type affects the outcomes. For instance, do you want to collect species as Latin, common names, or both? Do you want to collection condition as a verbal description, or a number? We then explore general strategies of tree inventory, such as hiring a contractor, performing work in house, or using volunteers, and the pros and cons of each.

We then move into a general discussion of data overall, and the difference between qualitative and quantitative data, and how you use each to draw meaningful conclusions about your tree data collected in the field. We explore how to create charts, and common mistakes made with communicating data to the public. Finally, we finish by exploring how your data can be used to enhance your existing programs such as risk management, urban forestry management planning, and community outreach.

## **Outcomes**

Upon completion of the course, the participants should be able to evaluate trees effectively, and decide what strategy best suits them and their organization(s). Practitioners should also have a better feel for the options available to them, and when each option suits the particular assignment.

# ***UF - Urban Settings, Species, Stresses & Strategies***

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## **Course Description**

This 1-day course will provide participants with a detailed overview of performing work in the urban environment. When we work with trees, we are working with organisms that are evolved to certain natural circumstances. But where they are growing, and the conditions they are growing under, are far from natural. To make this even more complex, the rules and regulations governing what can be planted and where, risk management strategies, and local ordinances governing who can and cannot perform work on trees can be daunting to navigate. This course will cover all facets of working in the urban environment, including biological, political, and programmatic challenges for trees, managers, and workers.

## **Recommended Reading**

*Up by Roots*, James Urban, 2008

## **Provided Equipment**

None

## **Day One**

This 1-day class will be classroom based and will rely upon a combination of lecture and group exercises. We begin the morning session by examining tree biology, and the stresses that the urban environment puts on trees, from a science-based perspective. This will include common pests and diseases in the urban environment, as well as abiotic factors. We will also explore how tree species selection can impact how these stresses manifest or may be avoided. Finally, we will look at biological, chemical, and cultural methods to alleviate stress once it has set in.

For the afternoon, we will discuss working in the urban environment. Topics will be wide ranging, and will include risk management, local ordinances, utility and right of way issues, communicating with residents and managers, and equipment issues and maintenance. Participants are encouraged to come equipped with challenging situations they have experienced in the past so we can discuss these as a group and create strategies to address these challenges.

## **Outcomes**

Upon completion of the course, the participants should be able to recognize challenges in the urban environment, and respond to them appropriately, or know what resources are available to help them with responding to them.



# *UF - Tree Regulations & Legislative Concerns*

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## **Course Description**

This Advanced Training class will focus on the existing Local, State, and Federal laws regarding trees, and how to maintain compliance with those regulatory agencies, both from a public and private point of view. We will also explore many of the organizations which are active in Tree-related legislation in Illinois and abroad, such as the Illinois Forestry Development Council, Illinois Green Industry Association, Tree Care Industry Association, as well as the Illinois Arborist Association, among others. Additionally, we will examine the legislative process on a scale from municipality all the way to federal and show some examples of how concepts become law at each level, and how you as a practitioner can reasonably become involved with the process. We will also explore the topics of avoidance of conflict of interest in being an advocate for legislation. The class will be in a lecture and group-exercise format, and students will be assessed based on a written exam for their comprehension of the subject matter.

## **Recommended Reading**

*Understanding Tree Law: A Handbook for Practitioners*, Barri Kaplan Bonapart, 2014

## **Provided Equipment**

None

## **Day One**

This 1-day class will be classroom based and will introduce participants to a variety of topics they are likely not familiar with, but also likely deal with every day, whether they know it or not. Topics will include, but are not limited to:

1. Illinois wrongful tree cutting act statutes
2. Trespass and hold harmless
3. Legality of pruning trees overhanging others property
4. Utility and right of way issues
5. Local, county, and state regulations governing trees
6. Property development ordinances and opacity requirements
7. The various standards organizations and what standards apply when
8. Resources available to you for legal defense in the event of an incident
9. Communication strategies

## **Outcomes**

1. To understand the laws regarding trees in our Urban Forest
2. To understand how to create your own Codes and Ordinances in accordance with existing State, Federal, and Industry standards

# *UF - Tree Appraisals*

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## **Course Description**

This is a two-day module designed to provide a comprehensive insight into current tree appraisal methods. The course will be based on the 9<sup>th</sup> edition of the CTLA Tree Appraisal Guide. Participants will learn details on the market, cost and income approaches to tree valuation and how to present the findings in a written report.

## **Equipment Requirements**

1. 9<sup>th</sup> Edition of the CTLA Tree Appraisal Guide
2. Diameter Tape
3. Notepad
4. Clipboard
5. Comfortable clothes for outdoor activities, including rain gear

## **Optional Equipment**

1. Clinometer or similar height measurement device
2. 100-foot tape or measuring wheel
3. Caliper
4. Camera

## **Required Reading**

1. *CTLA Guide for Plant Appraisal, 10<sup>th</sup> Edition (Second Printing)* by Council of Tree and Landscape Appraisers.
2. *Illinois Appraisal Factors (Regional Map & Regional Factors)* is available online and can be downloaded for free at: <http://illinoisarborist.org/services-we-provide/appraisal-factors-for-illinois/>

## **Recommended Reading**

1. *The Professional Amenity Plant Appraisal Handbook* by Marty Shaw, RCA

## **Day One**

The first day will focus primarily on classroom lecture with some valuation exercises being conducted outdoors. The morning session will be devoted to detailing each of the appraisal methods in common use, such as the replacement method and trunk formula method. A decision tree for selecting the most appropriate method will be discussed. A number of exercises will be used to familiarize participants with each method. The afternoon will concentrate on measurements and data gathering. This lecture will be a mix of classroom and outdoor activities. The end of the first day will focus on the components of a credible report.

## **Day Two**

The second day will primarily be spent outdoors where participants will carry out appraisals in a number of different scenarios with increasing complexity. The last hour will be in the classroom discussing the nuances of the outdoor activities and answering participant questions.

# *UF - Tree Appraisals, Continued*

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## **Outcomes**

Upon completion of the Tree Appraisal module, each participant will gain the knowledge and increased competency of tree and landscape appraisals. This enhanced understanding will allow participants to:

- Describe and distinguish between the various valuation methods
- Conduct accurate measurements and collect pertinent data
- Accurately use the Trunk Formula Method
- Accurately use the Replacement Method
- Develop a credible appraisal report

# *UF - Public Relations & Community Outreach*

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## **Course Description**

Trees in a community are a collective asset comprised of trees located on public and private property. This course will teach you how to provide outreach, education and resources to members of your community so they can better manage and care for their portion of the urban forest resulting in a healthier, less risk prone, diverse forest that is an improved asset for the collective community. Recommendations will be provided for commercial/industrial residents, homeowner's associations and individual property owners for how to gauge your audience, and effectively communicate your message.

## **Recommended Reading**

None

## **Equipment Requirements**

None

## **Day One**

This one-day course will focus on effective communication and outreach strategies. We will begin by exploring some of the issues we face in the arboricultural industry, and how public perception of our industry is hurt by some very common behaviors and practices, and how we can be better ambassadors for our industry.

We will then walk through a number of scenarios brought into the classroom by the instructor, as well as participant stories, and work as a group to discuss how these real-life situations could have been handled better, or how they succeeded. Many classroom talks don't want you to discuss specific issues, this one will focus on them, so we ask participants to come prepared with difficult communication situations they have faced before so we can discuss them and do a variety of role-playing exercises.

Finally, we will discuss the role of modern media such as new, television, and social media outlets, and how to interact with each. We will also discuss how to create a press kit for your organization that presents a polished and professional look and go through some successful public relations strategies that various organizations have employed in Illinois and abroad. A test will be given to determine a passing grade.

## **Outcomes**

Upon completion of the course, attendees should be able to identify difficult public relations situations before they become an issue and know some strategies for how to respond to them or preempt them. They should also know how to present themselves professionally, and represent their industry and their organizations well, even under difficult and sometimes adversarial circumstances. Finally, attendees should be aware of resources available to help them in creating a PR strategy.

# *UF - Tree Risk Management in Urban Environments*

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## **Course Description**

This workshop covers two days and 8 hours of instruction. The course will be divided between time in the class and field. The primary focus of discussion will be centered on providing participants with a high level of competency in understanding tree biology; tree mechanics; the different forces applied to trees; structural defects and the interaction of all factors on determining failure potential. An additional focus will be on developing achievable and defensible tree risk management strategies. Subject matter was developed for both municipal foresters and private sector arborists in mind. Numerous thought-provoking failure and analysis demonstrations have been created specifically for this advanced course.

## **Recommended Reading**

*ISA Best Management Practices-Tree Risk Assessment*, Thomas Smiley et al, 2017

*ANSI A300.9 Standard: Tree Risk Assessment*, Tree Care Industry Association, 2017

## **Equipment Required**

Field clothing (raingear, if necessary), notepad and pencil (or erasable pen)

## **Equipment Provided**

DBH tape, rubber mallet, binoculars, risk assessment sheets

## **Day One**

This one-day course will focus on assessing and managing tree risk in the urban environment. Please note that this class is not meant to be a surrogate for the TRAQ course and does not result in a qualification or certification to assess risk. It is an in-depth study that is meant to either supplement TRAQ or provide a more thorough understanding of risk assessment concepts. This course is not recommended for those with no risk assessment background.

We will begin by reviewing the TRAQ methodology and terminology, as well as updates that may have occurred in the past several years. From there, we will discuss tree biology and biomechanics, and both standard as well as more exotic means of tree and tree part failure. We will then move into the field to perform some risk assessment activities and work through some sample scenarios.

The class will then return to the classroom, where we will work on creating a viable Risk Assessment report and discuss what a risk management policy should look like for a variety of organizations.

## **Outcomes**

Upon completion of the course, attendees should be able to understand fairly complex risk assessment scenarios, as well as identify the correct fieldwork and reporting avenues to document such risk. In addition, attendees should feel comfortable communicating with clients and the public about tree risk topics and be able to write an effective strategy and report.