The School of Arboriculture at Morris Arboretum offers high-quality courses taught by world-renowned instructors and experts in the field.

See inside for descriptions. Topics include:

• Diagnosing and Detecting Woody Plant Disorders
• Managing Forest Fragments
• Tree Appraisal Workshop
• Caring for Mature Trees
The Morris Arboretum is proud to print on FS C (Forest Stewardship Council) certified paper, which supports the growth of responsible forest management worldwide through its international standards.

classes

Morris Arboretum
University of Pennsylvania
School of Arboriculture

spring 2017 classes

CEUs for:
• Arborists
• Landscape Architects
The Morris Arboretum of the University of Pennsylvania

is an educational institution that promotes an understanding of the important relationships between people, plants and place. Founded in 1887 as the private estate of John and Lydia Morris, brother and sister, the Arboretum today is an interdisciplinary center that integrates art, science, and the humanities. It is the official arboretum of the Commonwealth of Pennsylvania. It is listed in the National Register of Historic Places and is accredited by the American Alliance of Museums. The 92-acre public garden, located in the Chestnut Hill section of Philadelphia, provides an idyllic setting for historical architectural features as well as a fine collection of contemporary sculpture. Specialty garden areas include the Rose Garden, Swan Pond, English Park, Asian gardens, meadows, and woodlands. More than 12,000 labeled woody plants from around the world grow here along with superior plants for urban and community landscapes. The Arboretum provides internships, school tours, adult and professional education, lectures, and other special events.

The School of Arboriculture at Morris Arboretum

offers high-quality courses designed for arborists, landscape architects and designers, urban foresters, land managers, and other tree care professionals. Classes cover a wide range of topics including climbing techniques and safety, tree identification, pest and disease problems, tree health, and land management practices. The School of Arboriculture is committed to providing first-rate educational and professional development opportunities led by world-renowned instructors and experts in the field.

International Society of Arboriculture Continuing Education Units

The Arboretum’s School of Arboriculture courses carry International Society of Arboriculture Continuing Education Units. If you are an ISA certified arborist and need to maintain certification by taking 30 credits over a three-year period, you may want to sign up for classes at the Arboretum. The ISA category codes for CEUs are as follows: Science=S, Practice=P, and Management=M. Many of the courses also carry CEUs for Pennsylvania landscape architects. The number of credits are noted at the end of each class. If you have questions about CEUs, please contact Jan McFarlan, (215) 247-5777, ext. 156 or jlm@upenn.edu.
Diagnosing and Detecting Woody Plant Disorders

Dr. Neil Hendrickson  
*Northeast Technical Support, Bartlett Tree Research Laboratories*

In this class, we will cover key diagnostic tools and techniques, as well as treatments for both plants and soil to help promote plant health and create sustainable landscapes. We will also discuss some of the most common cultural mistakes we see in the landscape and how they can be corrected. Accurate diagnosis of plant disorders is key when managing woody plants in the built landscape. Possible plant health problems include insect or mite infestations, diseases including those spread by insect vectors, environmental problems like soil compaction, or a combination of all of these factors. Being able to observe and think in a systematic fashion that will help to pinpoint the problem is an important part of the process. In this presentation, Neil will present some of the diagnostic tools and techniques that he has learned in his over 35 years of experience as an arborist. He will help us understand how we can continue to preserve the health and beauty of our landscape trees and preserve biodiversity in the landscapes in our care. **This course carries 5.75 CEUs for ISA certified arborists (S=2, P=1.75, M=2).**

**Thursday, February 23**  
9 a.m.–4 p.m.  
Fee: $135 (includes lunch)

Preserving Trees During Construction

Jason Lubar  
*Associate Director, Urban Forestry, Morris Arboretum*

Successful tree preservation during construction assures that a project’s goals are achieved without jeopardizing the health and lifespan of protected trees. Since there must be a collaborative process by decision-makers for this to occur, people from all disciplines involved with the construction process will benefit from this class. We will assist you in determining which trees to preserve, how to designate adequate tree protection zones based on the tree’s structural and biological needs, how to specify and install protective fencing, and how construction processes such as cut/fill, trenching, and soil compaction affect both existing and proposed trees. Tree physiology and biology will be explored in this class. Preservation costs and tree protection specifications will be discussed and tree protection myths will be presented and dispelled. Students will be provided comprehensive technical information about tree-related construction impacts and they will leave with an understanding about how these impacts relate to tree growth and longevity. **This course carries 5.75 CEUs for ISA certified arborists (S=2, P=1.75, M=2) and CEUs for landscape architects.**

**Friday, February 24**  
9 a.m.–4 p.m.  
Fee: $135 (includes lunch)
Managing Forest Fragments

Ken LeRoy
Arborist, John B. Ward & Co Tree Experts

Fragmentation of natural areas due to urbanization results in isolated forest patches. Cut off by highways, rail lines, commercial and residential developments, these patches of green infrastructure surrounded by the built environment are often neglected. These disturbed landscapes can be managed to develop a healthier, safer, functioning forest. The potential of the earth to support optimum tree growth and carbon sequestration can be realized by following basic forestry practices: vine control; preferred species selection; thinning for fewer more efficient trees; soil health; wildlife enhancement; and, carving out access for people. All the earth is a garden and requires tending. Come and learn how to grow good woods in our community forests. This course carries 5.75 CEUs for ISA certified arborists (S=2, P=1.75, M=2).

Friday, March 3
9 a.m.–4 p.m.

Fee: $135 (includes lunch)

Introductory Tree Climbing

Zach Shechtman
Owner, Shechtman Tree Care

Rob Thigpen
Foreman, Shechtman Tree Care

This class provides an introduction to tree climbing and features the opportunity to have supervised climbing instruction in trees. It is ideal for tree companies looking to advance promising grounds
staff, or gardeners and landscapers who want to add new skills. Effective methods for climbing trees will be demonstrated by instructors and practiced by students. Safety rules will be reviewed and stressed. Students will learn how to tie critical knots regularly used by arborists. Included in the fee, each student will receive a copy of *The Tree Climbers Companion* by Jeff Jepson, a great resource for climbers. Bring an arborist’s rope and saddle, a hard hat, gloves, safety glasses, and insect repellent to the class. Wear boots, long pants, and dress for the weather. We will meet at Bloomfield Farm. Look for the paved road across Northwestern Avenue from the public garden entrance. Park in the lot and follow the signs to the Horticulture Center. This course carries 17.25 CEUs for ISA certified arborists (S=0, P=17.25, M=0).

**Wednesday, Thursday, and Friday**

March 15, 16, & 17
9 a.m.–4 p.m.

**Pruning Shrubs for Maximum Health and Beauty: A Hands-on Class**

Vince Marrocco
*Chief Horticulturist, Morris Arboretum*

Pruning shrubs is an essential practice for a well-maintained landscape. While proper pruning is important, it is not difficult if you understand the basics. This class teaches the principles of why, when, and how to prune a variety of shrubs and hedges. A morning lecture and demonstration will be followed by an afternoon session of supervised, hands-on pruning. **Please bring your pruning tools and dress appropriately for the weather.** This course carries 4.5 CEUs for ISA certified arborists (S=1.5, P=2, M=1).

**Tuesday, March 21 - Raindate March 24**

Fee: $120 (includes lunch)
10 a.m.–3 p.m.

**Reading the Land through Climate Change: Local Plant Adaptation Past, Present, and Future**

Mark Demitroff
*Adjunct Professor, Stockton University*

Ancient climate change profoundly influenced the character of the flora that we cherish today. Local ecosystems and the native plants that depend upon them owe much of their inheritance to cold, nonglacial processes that characterized much of the last 2.5 million years. We will reconstruct local past environments through geology, climatology, and plants to help develop a long-term view of ever-changing plant adaptation. We will then be better able to preserve and manage habitat in the future. Mark is a board director for the U.S. Permafrost Association and for South Jersey Culture and History Center. He lectures internationally and publishes on ancient climate change and permafrost, and Quaternary Science. A native of the Pinelands, Mark consults and provides expert witness testimony as a New Jersey Certified Tree Expert. **This course carries 5.75 CEUs for ISA certified arborists (S=3, P=1, M=1.75).**

**Friday, March 24**

Fee: $135 (includes lunch)
9 a.m.–4 p.m.
Fundamentals of Soil Science
Dr. Rex Bastian  
*Regional Technical Advisor, Davey Tree Expert Company/The Care of Trees*

Mark Highland  
*Founder, The Organic Mechanics Soil Company*

We have always known that soil is extremely important for growing plants. It is estimated that 80% of the problems we see with urban trees originate from improper soil conditions. Until recently we primarily considered the chemical and physical components of soil like texture, pH, compaction, and nutrient levels. The latest findings show that the living components of soil are at least as important as the chemical parameters. With the help of soil bacteria, fungi, protozoans, and other living creatures, we can create greener landscapes and reduce our reliance on petroleum-based fertilizers and chemicals. **This course carries 5.75 CEUs for ISA certified arborists (S=3.75, P=1, M=1), and CEUs for landscape architects.**

**Thursday, March 30**  
9 a.m.–4 p.m.

Fee: $135 (includes lunch)

Caring for Mature Trees
Dr. Rex Bastian  
*Regional Technical Advisor, Davey Tree Expert Company/The Care of Trees*

Robert Wells  
*Associate Director, Arboriculture Outreach*

Learn how to care for mature trees and the changes that occur as trees age. Trees, like all living things, survive through the transfer of energy. This transfer occurs both within the tree itself, as well as between the tree and its environment. Far from being static processes, however, energy relations are highly dynamic, constantly changing as trees age, decline, and die. The astute arborist should be aware of these changes, so as to provide the best advice and management recommendations to their clients for the care of older trees in the built landscape. Rex joined The Care of Trees in 1989 after receiving his Ph.D. from Iowa State University, majoring in Entomology. He is a Regional Technical Advisor with the Davey Tree Expert Co./The Care of Trees, with emphasis on education and training, public relations, and diagnostics. He is an International Society of Arboriculture Board Certified Master Arborist and currently serves on the ISA Board Certified Master Arborist Test. **This course carries 5.75 CEUs for ISA certified arborists (S=3, P=.75 M=2).**

**Friday, March 31**  
9 a.m.–4 p.m.

Fee: $135 (includes lunch)
Tree Appraisal Workshop

James Korman  
Consulting Arborist

Assigning a fair monetary value to individual trees is an important skill for municipal and consulting arborists as well as anyone who is responsible for managing a property, park, or arboretum. This workshop focuses on the theory and practice of the appraisal of woody plants. James will review the various approaches to valuation that are currently available and how to determine which is the most suitable choice. The primary focus will be on the Cost Approach and the Trunk Formula Methodology for determining monetary value. The outdoor component of the workshop involves simulated appraisals on several trees in the Arboretum with hands-on instruction. An analysis of each problem will follow. The instructional material follows the 9th edition of the Guide for Plant Appraisal (International Society of Arboriculture) as prepared by the Council of Tree and Landscape Appraisers (CTLA) and reflects current understanding and practice in arboriculture. Come prepared to be outside. This course carries 6.75 CEUs for ISA certified arborists (S=2, P=2.5, M=2.25).

Friday, April 7  
8:30 a.m.–4:30 p.m.  

Fee: $135 (includes lunch)
Insect Pests of Woody Plants

Richard Buckley
Director, Plant Diagnostic Laboratory, Rutgers University

Richard Buckley, a plant pathologist at Rutgers University, will focus on the most important insects and mites that pose a threat to landscape plants. You will learn about insect pests that are most prevalent in our region and discuss how to identify them and the damage they cause. Richard will bring you up to date on best management practices. He will also discuss the latest findings on Chinese lantern fly, Viburnum leaf beetle, emerald ash borer, and walnut twig beetle as well as several other new invaders. This course carries 5.75 CEUs for ISA certified arborists (S=3, P=1, M=1.75).

Tuesday, April 11
9 a.m.–4 p.m.

Emerald Ash Borer: Controlling the Spread

Joel Spies
President, Rainbow Treecare Scientific Advancements
Shannon Herbst
Mid-Atlantic Territory Manager, Rainbow Treecare Scientific Advancements

The spread of emerald ash borer (EAB) into Eastern Pennsylvania and New Jersey is a major challenge and opportunity for Philadelphia area arborists to preserve worthwhile ash trees in the landscapes we manage. One of the most efficient and environmentally safe methods of pesticide application is microinjection technology that allows you to apply systemic products to targeted trees in a responsible manner. Microinjection is also an effective way to deliver a host of other fungicides and plant health care products. A key factor in achieving safe and effective applications is a thorough understanding of the injection techniques and products that are available. This one-day workshop will provide you with a background in microinjection and an overview of all of the available products and equipment on the market. You will have a hands-on opportunity to practice an application on an ash tree. This course carries 5.75 CEUs for ISA certified arborists (S=2, P=1.75, M=2).

Friday, April 21
9 a.m.–4 p.m.
woody plant conference

Mark your calendars for the 20th annual Woody Plant Conference at Swarthmore College. This popular day-long conference focuses on great woody plants for the Mid-Atlantic states and how to use them in the landscape. The conference is co-sponsored by Morris Arboretum, Chanticleer, Longwood Gardens, the Pennsylvania Horticultural Society, the Scott Arboretum of Swarthmore College, and Tyler Arboretum. The conference is geared to landscape professionals and avid amateur gardeners. Some of the featured speakers include:

- Nathan Erwin, Director of the Insect Zoo at the Smithsonian’s National Museum of Natural History will speak about plant pollination and some unlikely pollinators.
- Tim Boland, Executive Director at Polly Hill Arboretum will discuss his experiences and goals for collecting woody plants in the U.S.
- Peter Del Tredici, Senior Research Scientist Emeritus at Arnold Arboretum will focus on understanding the impacts of urbanization on plants in both native and designed landscapes.

Continuing education units (CEUs) for PA and NJ landscape architects and International Society of Arboriculture certified arborists will be available. Brochures will be available in April from Longwood Gardens at 610-388-5238.

Friday, July 21
8:30 a.m.–4:30 p.m.
The Morris Arboretum is located in the Chestnut Hill section of Philadelphia. For further information or directions, call (215) 247-5777 or check the Arboretum website at: www.morrisarboretum.org.

The Green Choice
We need your input. In the interest of sustainability, if you would like to opt out of receiving our course brochure, please e-mail us at education@morrisarboretum.org with the subject line, “Opt out.” We always offer our course brochures on our website under the Education tab.

Location of Classes
All classes will be held at the George D. Widener Visitor Center unless otherwise noted.
Parking areas may be reached by entering the Arboretum on Northwestern Avenue. Students should arrive at least ten minutes before the start of the class to allow time to check in.

Please note: Parking adjacent to the Visitor Center is sometimes at full capacity on nice weather weekends. If we go into overflow parking, you may be required to park at the bottom of the hill and be shuttled into the garden.

If you are a person with a disability and require an accommodation to participate in classes, please contact Jan McFarlan at (215) 247-5777, ext. 156, Monday through Friday, to discuss accommodation. For people who use TTY, please call PA Relay at 1-800-654-5984.

Refund and Cancellation Policy
In order to receive a refund for a class you must call (215) 247-5777, ext. 125 at least five business days before the class start date. There will be a $5 processing fee associated with refunds. The Arboretum reserves the right to cancel any program if necessary. Refunds take approximately three to four weeks to process. There will be no refunds after a class begins.

Weather Information
In case of inclement weather conditions on the day of your class, please call the Education Department, (215) 247-5777, ext. 156, for information on possible cancellation or rescheduling of the class.
### registration form

<table>
<thead>
<tr>
<th>Course Title and Names of Attendees</th>
<th># Students</th>
<th>Date</th>
<th>Fee</th>
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<tr>
<td>Managing Forest Fragments Jane Smith</td>
<td>1</td>
<td>3/3/17</td>
<td>$135</td>
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**Total Enclosed** $135

Please make membership and course payments separately.

To register online, visit [https://online.morrisarboretum.org/arboriculture](https://online.morrisarboretum.org/arboriculture).

To register by mail, send this form along with check payable to the “Morris Arboretum” to:

- Education Department
- Morris Arboretum
- 100 East Northwestern Avenue
- Philadelphia, PA 19118-2697

**To register by phone, have your credit card ready.**

Call the Education Dept. (215) 247-5777, ext. 125.

**Payment Information**

Name ____________________________________________

Address __________________________________________

___________________________________________________________________________

Phone ____________________________________________  home  work  cell

Email Address __________________________________________

☐ My check or money order payable to the Morris Arboretum is enclosed.