



# Arboriculture/Urban Forestry Technician

## Semester 1

### ***Landscape Plant Identification, 2 cr***

This course introduces students to woody shrub and tree identification of species commonly used in Wisconsin commercial and residential landscapes. Students develop techniques and basic skills necessary for plant identification and learn the cultural practices required to grow healthy woody plants.

### ***Fundamentals of Aerial Tree Work, 2 cr***

Students examine the basic safety requirements, equipment, and techniques employed by arborist who work aloft. Using a rope-and-harness and an aerial lift, students develop the skills to conduct aerial arboriculture (tree care). An emphasis is placed on recognizing electrical hazards, tying knots, tree ascension, limb walking, and maneuvering through the tree canopy. Students who choose to remain on the ground learn the skills to assist a climber working aloft.

### ***Chainsaw Safety and Operation, 2 cr***

Students acquire the skills to safely operate a chainsaw in the arboricultural industry. Emphasis is placed on identifying the importance and adopting the methods of personal protective equipment, safe chainsaw operation, routine maintenance, and common chainsaw cutting techniques in accordance with best management practices and current industry standards. Students will develop chainsaw skills in a variety of field exercises that focus on techniques used in tree pruning and removal, including the by-pass cut, open face notching, bore cutting, and wedging.

### ***Urban Tree Maintenance, 2 cr***

Students explore and develop skills in the art and science of tree pruning. Young tree training and mature tree maintenance are emphasized. Learners use tree pruning techniques and follow safety requirements set by current industry standards.

## Semester 2

### ***Integrated Pest Management, 2 cr***

Students examine insect and pest identification, and are introduced to the diagnosis of tree health issues. The course explores how to manage tree health through invasive and non-invasive practices. Students will develop skills in chemical handling, mixing, calibration, and application via field exercises. Using the tools learned in the course, students will be prepared to take the Wisconsin Department of Agriculture and Consumer Protection's pesticide applicator exam which is proctored in the class.

### ***Introduction to Horticulture, 3 cr***

Students examine the science and profession of horticulture, including its role and importance of throughout history, current trends, and careers. Learners will identify horticulture crops, crop use and interrelationships among the environment, plant growth, and plant development.





### ***People, Resources and Sustainability, 3 cr***

Students examine the relationship between the human population and natural resources over time, and the effect of that relationship on sustainability. Global resources, environmental concerns, and the human dimensions of resource management are explored from biological, socioeconomic, and sustainability perspectives.

### ***Tree Growth and Development, 2 cr***

Students examine the biology of tree systems and explore tree growth and development. Compartmentalization of wounds and adaptation of trees to their surrounding and environment are emphasized. Through participation in this course, students will acquire a framework for arboriculture.

### ***Aerial Tree Work Practicum 1, 2 cr***

Students use the skills attained in Fundamentals of Aerial Tree Work to develop the method and techniques utilized by arborist who work aloft. Students will identify tree pruning needs and create a work plan to ascend the tree and accomplish the goals set by their evaluation. This course will introduce students to ground and work site management, aerial rescue, and electrical hazard awareness. Learners will perform all tasks to industry standards.

### ***Tree Crew Practicum 1, 2 cr***

Students acquire the basic skills and techniques employed by arborist who work on tree crews. Working aloft is limited in this course. Emphasis is placed on student development as a member of a working crew, acquiring skills in tree pruning, setting throwlines, ground work, and work site management. This course emphasizes the development of skills expected of Plant Health Care Technicians working in support of arboricultural tree care crews.

## **Semester 3**

### ***Landscape and Turf Management Fall, 2 cr***

Students acquire skills for the planning and installation of living and non-living landscape materials and turf through the exploration of landscape and turf management during the fall season. Both estimating and time management are emphasized in this course.

### ***Aerial Tree Work Practicum 2, 2 cr***

Students examine the theories behind technical rigging and acquire the skills for technical aerial tree removal in an urban setting. The course approaches the concept from a beginner level, building on the climbing and pruning abilities gained in prior aerial courses. Additional skills are acquired in tree cabling and bracing, single rope technique, and electrical hazard awareness.

### ***Tree Crew Practicum 2, 2 cr***

Students develop skills behind technical rigging and acquire the skills to operate as ground support for technical aerial tree removal in an urban setting. Working aloft is limited in this course. Students identify methods to increase crew efficiency and support aerial crew members by setting lines, rigging, and assisting in developing technical tree removal plans. Identifying and operating various friction devices and running ropes during the process of lowering rigged limbs is emphasized. Additional skills are acquired in equipment organization for tree cabling and the installation of tree bracing. Electrical hazard awareness is examined.

### ***Dendrology and Silvics, 3 cr***

Students explore how trees interact with their environment and with one another, at different spatial and temporal scales. Concepts developed in botany and ecology are further examined with an emphasis on woody plant classification and the life history and characteristics of forest trees. Skills acquired through this course are tree identification and the ability to identify where different tree species thrive.







### ***Introduction to Fisheries, Forestry, and Wildlife Resources, 3 cr***

Students investigate the framework for fundamental natural resource disciplines by examining the principles and practices of fisheries, forest management, and wildlife management. This course also examines how goods can be produced and services provided while maintaining ecosystem integrity and functions.

### ***Applied Landscape Architecture, 2 cr***

Students examine the process of landscape design and acquire a structured approach to shaping outdoor settings for human use and enjoyment. Skills in graphic techniques are developed to communicate ideas in landscape plans through drawings and sketches. Students will develop experience in presenting landscape designs to large and small groups.

## **Semester 4**

### ***Ornamental Plant Health Care, 3 cr***

This course focuses on classification and identification of ornamental plant insects, diseases, and injury caused by non-living agents. Students will examine the methods by which living organisms and non-living environmental factors cause plant damage. Skills in diagnostics, damage assessment, sample preparation, and control strategies are acquired.

### ***Landscape and Turf Management Spring, 2 cr***

Students acquire skills for the planning and installation of living and non-living landscape materials and turf through the exploration of landscape and turf management during the spring season. Both estimating and time management are emphasized in this course.

### ***Applied Urban Forestry, 2 cr***

Students acquire skills in techniques, tools, and pieces of equipment used to manage trees and tree populations that make up the urban forest. Students will explore tree inventory practices and pruning cycles used to maintain a city tree population. Students will also identify and examine the necessity of tree species diversity within urban environments. This course further explores arboricultural career options available from commercial, municipal, and utility employers.

### ***Ecological Basis for Natural Resource Management, 3 cr***

Students explore the basic principles of ecology and examine their application in the management of natural resources. Exploration of the scientific method and interactions between and amongst species are emphasized. Students will acquire hands-on skills with measurements and data collection, research, preparation of technical reports, and use of computer models.

### ***Introduction to Soil and Water Resources, 3 cr***

Students explore integrated concepts of soil and water resources at the landscape level. The course examines how physical, chemical, and biological interactions relate to watershed processes, and how these interactions respond to land use and management.

### ***Aerial Tree Work Practicum Capstone, 1 cr***

Students integrate the skills learned through prior aerial tree work practicum courses with the fundamental framework developed in the arboricultural/urban forestry courses to explore methods to provide clientele with ethical and appropriate arboricultural recommendations. Students will also explore aerial rescue procedures and emergency protocol.

### ***Tree Crew Practicum Capstone, 1 cr***

Students integrate the skills learned through prior tree crew practicum courses with the fundamental framework developed in the arboricultural/urban forestry courses to explore methods to provide clientele with ethical and appropriate arboricultural recommendations. Students will also explore how to support a climber in an aerial rescue scenario and emergency protocol. Working aloft is limited in this course.

### ***Not Placed within a Semester***

### ***Advanced Studies – Plant Biology, 1 cr***

Students examine plant biology with emphasis on growth, reproduction, and cellular morphological and physiological processes.

