



## COURSE OUTLINE: ARB702 - ARBORIST THEORY II

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<b>Course Code: Title</b>	ARB702: UTILITY ARBORIST THEORY II	
<b>Program Number: Name</b>	6561: UTILITY ARBORIST II	
<b>Department:</b>	UTILITY ARBORIST - APPR.	
<b>Semesters/Terms:</b>	20W	
<b>Course Description:</b>	Describe how to plan work safety, identify electrical hazards, identify other hazards outside of the electrical environment, use of various knot and hitches in the Utility Arboricultural trade, pruning and removing trees in proximity of electrical conductors, ascending, descending and performing an aerial rescue, rigging principals and hot to manage fire and dangerous goods.	
<b>Total Credits:</b>	3	
<b>Hours/Week:</b>	25	
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<b>Prerequisites:</b>	There are no pre-requisites for this course.	
<b>Corequisites:</b>	There are no co-requisites for this course.	
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>	
<b>Course Evaluation:</b>	Passing Grade: 50%,	
<b>Course Outcomes and Learning Objectives:</b>	<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
	Plan all work operations safely, in compliance with provincial and municipal legislation and regulations.	Determine required personal protective equipment (fall protection/work positioning systems) Determine job site limits(safe limits of approach, buried utilities, overhead utilities)
	<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
	Describe inspecting, adjusting, maintaining and wearing required personal protective equipment.	Rubber gloves CSA approved (voltage class, pre-use inspection, air test, expiry date, leather covers) Flame resistant clothing (correct fit, repair, and cleaning, appropriate ASTM standard)
	<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
	Describe methods of eliminating or controlling	Barriers to electrical energy (application of utility work protection code, use of hold-offs for equipment protection, use



electrical hazards.	of cover-up, use of insulated aerial device)
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
Describe how to manage all other potential hazards on the work site, including hazards in trees, overhead, on or under the ground, and hazards to the public.	Mechanical tools and equipment (hydraulic tools)
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
Describe proper use of knots and hitches.	Rigging knots(9)- bowline tied away, jacked bowline, slippery bowline, stilson hitch, timber hitch, marline hitch, machard tresse, slippery knot, quick hitch
<b>Course Outcome 6</b>	<b>Learning Objectives for Course Outcome 6</b>
Describe the types and purposes of typical pruning processes and the tools and equipment required.	Considerations required for pruning operations (cycle length, voltage, proximity, customer consideration, species characteristics, tree condition, skirts, and overhang) Mechanical tools and equipment (hydraulic tools, pruner, saw, circular saw, chainsaw) Chainsaw use aloft: secured to climber, start in branch union, chain brake on, climber secured with secondary fall protection system e.g. work positioning lanyard, smooth controlled cuts, chainsaw shut off between climber movements
<b>Course Outcome 7</b>	<b>Learning Objectives for Course Outcome 7</b>
Describe typical tree removal process.	Felling trees in proximity to energized apparatus (conductor location, pole hardware e.g. guys, primary conductors, service conductors, use of guide ropes, perpendicular felling, skirt hazards, parallel felling) Felling assist devices (ropes, tackle blocks, mechanical assists) Use of ropes and knots Sectionalizing tree
<b>Course Outcome 8</b>	<b>Learning Objectives for Course Outcome 8</b>
Describe methods to prune and remove trees using an aerial device in proximity to energized electrical apparatus.	Inspect, adjust and wear fall protection equipment according to manufacturer recommendations Load tools, equipment and materials into bucket according to manufacturer instructions Operate aerial device controls while accessing desired work location (monitoring limits of approach, monitoring boom position, over roadways, near adjacent trees, poles, electrical conductors, position bucket in optimum positions to reduce body strains while performing work) Operate tools aloft: hand tools, handsaw, fiberglass reinforced plastic (FRP) pole pruner, fiberglass reinforced plastic (FRP) pole saw, rigging ropes, friction saver, slings, Whoopie, nylon web, rope, loppers, secateurs, friction devices, friction savers/cambium saver, connectors(carabiners, clevis), felling levers, wedges, rigging blocks (multisheave block), rope pullers, gas powered tools (chainsaw), hydraulic tools (pruner, saw, circular saw, chainsaw, tool disinfection as required) Sectional removals from aerial device (conductor location,



	<p>directional free fall away from energized conductor, conventional rigging, guide ropes, pull ropes, rigging using lowering devices)  Control movement of cut limbs and trunk sections from aerial device (conductor location, raise/lower limbs using ropes and mechanical advantage, cut limbs so they will not span conductors, control limbs using hinge cuts, lower cut limbs using friction devices, top tree using ropes and rigging equipment, creating false crotch)  Secure aerial device for travel according to manufacturer instructions.  Aerial device rescue using appropriate methods  Aerial device evacuation using appropriate methods</p>
<b>Course Outcome 9</b>	<b>Learning Objectives for Course Outcome 9</b>
Describe methods of herbicide application.	<p>Identify differing conditions of right of way in order to select application method(species, brush densities, environmental conditions, terrain, and soil type).</p> <p>Application methods (broadcast, stump treatment, basal treatment, soil sterilant, stem foliar).</p>
<b>Course Outcome 10</b>	<b>Learning Objectives for Course Outcome 10</b>
Identify appropriate communication skills to deal effectively with customers and in the workplace.	<p>Speak effectively (give directions or responses, clear enunciation, accurate and concise speech, coherence of message, use of proper language for listener, monitor resultant response or action).</p> <p>Solve problems on the job.</p> <p>Function as part of a team.</p> <p>Develop personal and work related goals.</p> <p>Work in a responsible manner.</p> <p>Solve problems occurring on the job.</p> <p>Function as part of a team/crew.</p> <p>Develop personal and work-related goals.</p> <p>Work in a responsible manner.</p>

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight	Course Outcome Assessed
Attendance and Participation	25%	
Final Test	25%	
Quizzes / Assignments	50%	

**Date:**

June 25, 2018

Please refer to the course outline addendum on the Learning Management System for further information.

