



## COURSE OUTLINE: ARB710 - VEGETATION MGMT

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<b>Course Code: Title</b>	ARB710: VEGETATION MANAGEMENT
<b>Program Number: Name</b>	6561: UTILITY ARBORIST II
<b>Department:</b>	NATURAL RESOURCES PRG
<b>Academic Year:</b>	2023-2024
<b>Course Description:</b>	Upon successful completion of this reportable subject the apprentice is able to describe safe work practices and requirements for operational planning, ascending, descending trees, pruning and removing limbs and trees, identifying electrical hazards, other hazards, handling and disposal of debris generated on the job site.
<b>Total Credits:</b>	3
<b>Hours/Week:</b>	30
<b>Total Hours:</b>	30
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<b>6561 - UTILITY ARBORIST II</b> VLO 2 Utility Arborist - L2
<small>Please refer to program web page for a complete listing of program outcomes where applicable.</small>	
<b>Essential Employability Skills (EES) addressed in this course:</b>	EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
<b>Course Evaluation:</b>	Passing Grade: 50%, D  A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
<b>Books and Required Resources:</b>	Pocket Ontario OH&S Act & Regulations Publisher: Thomson Reuters Edition: newest available Softbound Book  Electrical Utility Safety Rule Book



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**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
Describe the objectives and considerations of vegetation management.	<p>1.1 Define the objectives of vegetation management</p> <p>1.2 Define cycle clearing requirements</p> <ul style="list-style-type: none"> <li>- economics versus safety with longer clearing cycle</li> </ul> <p>1.3 Describe the considerations for managing vegetation</p> <ul style="list-style-type: none"> <li>- Define electrical system reliability measurements- SAIFI, SAIDI, CAIDI and impacts on pruning cycles</li> </ul> <p>Additional considerations to include:</p> <ul style="list-style-type: none"> <li>- determining when to prune versus tree removal</li> <li>- species characteristics (native species, growth habits, invasive species, and species at risk)</li> <li>- tree condition/tree canopy</li> <li>- geography</li> <li>- clearance cycles</li> <li>- higher voltage circuits versus lower voltage circuit</li> <li>- proximity of conductor to worksite</li> <li>- pole hardware e.g. guy lines, primary conductors, service conductors</li> <li>- customer consideration</li> <li>- consideration of vegetation compatibility based on</li> <li>- voltage classification</li> <li>- line height at max sag</li> <li>- terrain on corridor (flat ground, valley, knoll/hill at mid-span)</li> </ul>
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
Describe mechanical methods for controlling vegetation in proximity to energized electrical apparatus.	<p>2.1 Describe mechanical techniques that are used in various situations for controlling vegetation</p> <ul style="list-style-type: none"> <li>- Defining grinding and grubbing underbrush applications</li> <li>- Explaining use of mechanical tree harvesters</li> <li>- Use of excavators and bulldozers</li> </ul> <p>2.2 Describe safety precautions taken when mechanically removing vegetation</p> <ul style="list-style-type: none"> <li>- protection from flying projectiles</li> <li>- the requirement to identify underground and overhead utilities and danger zones</li> </ul>
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
Describe methods to prune and remove trees using an aerial device in proximity to energized electrical apparatus.	<p>3.1 Identify equipment required such as bucket truck, crane, off-road unit</p> <p>3.2 Identify hand tools and equipment required</p> <ul style="list-style-type: none"> <li>- fiberglass reinforced plastic (frp) pole pruner</li> <li>- fiberglass reinforced plastic (frp) pole saw</li> <li>- guide ropes pull ropes</li> <li>- hand saw</li> <li>- hydraulic tools for pruning and removing trees using an aerial device</li> <li>- hydraulic, pruner, chainsaws, circular saw, pole saw</li> </ul>
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>

	Describe the process for sectional removal of a tree while using a chainsaw aloft.	<p>4.1 Describe the considerations for determining method for sectional tree removals:</p> <ul style="list-style-type: none"> <li>- use of aerial device or climbing</li> <li>- wood size and weight</li> <li>- identifying the equipment to be used, (manual, power and rigging equipment)</li> <li>- conductor location</li> <li>- the need for rigging and lowering devices</li> </ul> <p>4.2 Describe the methods for sectional removal</p> <ul style="list-style-type: none"> <li>- free fall sectional removal</li> <li>- conventional rigging sectional removal</li> <li>- rigging using lowering devices</li> <li>- rigging using lifting devices</li> </ul> <p>4.3 Describe the process for controlling the movement of cut limbs and trunk sections from aerial device</p> <ul style="list-style-type: none"> <li>- raising/lowering of limbs using ropes and mechanical advantage</li> <li>- cutting limbs so they will not bridge conductors</li> <li>- controlling limbs using hinge cuts</li> <li>- lowering cut limbs using friction devices</li> <li>- topping tree using ropes and rigging equipment</li> </ul>
	<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
	Explain the procedures for the use of pesticides when managing vegetation around energized electrical systems.	<p>5.1 Identify hazards associated with pesticides use</p> <ul style="list-style-type: none"> <li>- describe the effects of pesticides on the body</li> <li>- define the LD 50 Rating of active ingredients in products</li> <li>- symptoms and treatments</li> </ul> <p>5.2 Identify application techniques such with back-packs and high-volume spray equipment and the hazards they present</p> <p>5.3 Identify application equipment</p> <p>5.4 Describe the use of pesticide concentrate and mixing solutions</p> <p>5.5 Explain the procedure for handling, applying, disposal and storage of pesticides according to Pesticides Act, RSO 1990 O. Reg 63/09</p>

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Attendance / Participation	25%
Final Test	25%
Quizzes / Assignments	50%

**Date:** November 9, 2023

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