COURSE OUTLINE: NRT146 - SILVICULTURE I

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Course Code: Title	NRT146: SILVICULTURE I
Program Number: Name	5230: FORESTRY TECHNICIAN
Department:	NATURAL RESOURCES PRG
Academic Year:	2025-2026
Course Description:	This course is the first in a two-part series on Forestry (Silviculture I and Silviculture II) that together provide a comprehensive overview of reforestation practices in Ontario. As an introduction to Ontario reforestation methods, the course covers silviculture policies and planning. Student will explore biological characteristics (silvics) of key forest tree species and how these influence regeneration. Topics include the impact of harvesting methods on regeneration, site preparation techniques for both artificial and natural regeneration, and the implementation of direct seeding operations. Emphasis will be placed on the ecosystem approach to silviculture and low impact natural forest regeneration systems complement the complete range of silviculture activities.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NRT200
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5230 - FORESTRY TECHNICIAN** VLO 1 — Conduct forest inventory surveys and field measurements to determine forest resources and values in forests and woodlots. VLO 2 — Assess soil characteristics, vegetation and wildlife habitats to identify their interactions within forest ecosystems. VLO 3 — Perform technical functions in silvicultural operations and assist in the monitoring and evaluation of the effectiveness of silvicultural practices. VLO 4 — Collect, analyze, interpret, and display spatial data using mapping technology and Geographical Information Systems (GIS) to contribute to forest resource management. VLO 5 — Contribute to sustainable forest management plans, including conservation and rehabilitation measures, taking into consideration the perspectives of a variety of stakeholders and the requirements of relevant legislation and regulations. VLO 8 — Work independently and in a collaborative environment while applying effective teamwork, leadership and interpersonal skills. VLO 9 — Communicate technical information to a variety of stakeholders in oral, written, visual and electronic forms.

Essential Employability Skills (EES) addressed in this course:	
	EES 1 — Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
	EES 2 — Respond to written, spoken, or visual messages in a manner that ensures effective communication.
	EES 3 — Execute mathematical operations accurately.
	EES 4 — Apply a systematic approach to solve problems.
	EES 5 — Use a variety of thinking skills to anticipate and solve problems.
	EES 6 — Locate, select, organize, and document information using appropriate technology and information systems.
	EES 7 — Analyze, evaluate, and apply relevant information from a variety of sources.
	EES 8 — Show respect for the diverse opinions, values, belief systems, and contributions of others.
	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.

Course Evaluation:

Passing Grade: 50%, D

A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.

Other Course Evaluation & Assessment Requirements:

Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in a F Grade for this Course.

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Describe the importance of silviculture in Ontario and explain who is responsible for its implementation.	1.1 Identify the reasons for possible wood shortages in Ontario. 1.2 Describe programs which are contributing to silviculture in Ontario. 1.3 Explain current forest industry responsibilities for silviculture and how forest management activities are being funded. 1.4 Describe provincial, federal and private sector activities contributing to reforestation success.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Describe the characteristics of the Great Lakes - St. Lawrence, Boreal and Southern Ontario forests and recommend management of their ecosites.	2.1 Describe the silvics of Great Lakes - St. Lawrence and Boreal tree species. 2.2 Identify and describe forest ecosites in the Great Lakes - St. Lawrence conifer forest and forests of Northeastern Ontario. 2.3 Recommend management of identified ecosites.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Describe silvicultural systems and harvest methods and why the systems and methods are	3.1 Define a silvicultural system and explain the difference between silvicultural systems and harvest methods. 3.2 List the silvicultural systems used in Ontario. Describe where each system should be used.

	3.3 Explain the components of each silviculture system is carried out and describe how each system encourages the regeneration of desired tree species. 3.4 Describe the main differences between harvest methods used in Ontario and explain the silvicultural advantages and disadvantages of each method.
used in different forests.	
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Forecast seed crops, collect and store tree seeds and conduct seeding operations. Demonstrate ability to grow crops of forest tree seedlings in a nursery and show ability to conduct business with private sector tree seedling production facilities.	4.1 Assess seedling quality using statistically sound sampling procedures. 4.2 Grow tree species of containerized tree seedlings from seed. 4.3 Visit a local tree seedling production facility. 4.4 Assist in the operation of the college containerized tree seedling greenhouse. 4.5 Identify 10 or more Boreal and Great Lakes - St. Lawrence forest tree seed species and associated fruiting structures.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Describe the objectives of site preparation and show how it can be carried out to meet silvicultural objectives.	5.1 List and describe practical reasons for carrying out site preparation. 5.2 Summarize how site preparation can change soil conditions and improve growing conditions for seedlings. 5.3 List and describe types of scarification prime movers. 5.4 Recognize scarifiers, understand how they operate, sites where each should be used and describe the results each equipment type will produce. 5.5 Describe the value of prescribed burning for ecosystem management. 5.6 Explain, giving examples, how controlled burning is being used in Ontario as a silvicultural treatment.
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Explain how logging systems can be used or modified in order to promote natural regeneration.	6.1 List and describe reasons why there has been a recent interest in natural regeneration systems. 6.2 Explain how harvest methods should be planned and managed to encourage natural regeneration. 6.3 Describe how Cut to Length can be planned and carried out to protect advanced regeneration.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	55%
Quizzes	15%
Tests	30%

Date: December 2, 2025

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

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