COURSE OUTLINE: NRT150 - FOREST INVENTORY

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Course Code: Title	NRT150: FOREST INVENTORY
Program Number: Name	5220: NAT ENVIRONMENT TN 5221: NAT ENVIRONMENT TY 5230: FORESTRY TECHNICIAN
Department:	NATURAL RESOURCES PRG
Semesters/Terms:	20F
Course Description:	Effective forest management for environmental assessment as well as forest harvest planning is based on accurate field inventories of the composition of the forest. This course examines methods of obtaining such information, through hands-on training. Tree and forest heights, diameters and ages will be covered. Inventory methodologies including fixed area plot measurement and point sampling will be carried out in the field. Compilation of forest inventory data will round out the course.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NRT126
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5220 - NAT ENVIRONMENT TN** VLO 1 Collect data from representative biological and environmental samples using routine test procedures. VLO 2 Utilize natural resources equipment and technology to accurately identify ecosystem components for purposes of conserving and managing natural resources. VLO 4 Conduct natural environment assessments according to standard field survey methods, including the use of appropriate equipment and materials. VLO 7 Work safely in adherence to occupational health and safety standards. VLO 8 Complete all work in compliance with applicable municipal, provincial and federal standards and guidelines. VLO 9 Contribute to the implementation of natural resource conservation and management. VLO 10 Perform basic project management support techniques. VLO 11 Communicate technical information accurately and effectively in oral, written and visual forms. **5221 - NAT ENVIRONMENT TY** VLO 1 Collect, analyze, interpret and report on data from representative biological and

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environmental samples.

VLO 2	Utilize natural resources information technology equipment to assemble, analyze and present identified ecosystem components for purposes of conserving and managing natural resources.
VLO 4	Plan, design, implement and participate in the maintenance of natural environment assessments.
VLO 7	Ensure all work is safely completed in adherence to occupational health and safety standards.
VLO 10	Communicate technical information accurately and effectively in oral, written, visual and electronic forms.

5230 - FORESTRY TECHNICIAN

VLO 1	Conduct forest inventory surveys and field measurements to determine forest resources and values in forests and woodlots.
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

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	for graduation.
Other Course Evaluation & Assessment Requirements:	Academic success is directly related to attendance. Missing more than 1/3 of the course hours in a semester shall result in an F grade for the course.

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Carry out accurate field measurements and inventories of forest trees.	1.1 Explain the concepts of timber cruising, forest inventories and growth and yield. 1.2 Carry out prism, fixed area and strip cruises complete with the associated compilations. 1.3 Understand how to design a timber inventory. 1.4 Demonstrate the ability to use electronic field instruments and data recorders.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Properly compile, summarize and report inventory results.	2.1 Compile complete, legible cruise tallies. 2.2 Summarize results using appropriate calculations. 2.3 Demonstrate the use of computerized tally sheets.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Demonstrate knowledge of the Forest Resource Inventory System in Ontario.	3.1 Record data using the FRI Format. 3.2 Explain the FRI system.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Calculate the number of trees per hectare, basal area per hectare and timber volume per hectare	4.1 Understand the concepts of stems per hectare, basal area per hectare and tree volume per hectare. 4.2 Apply mathematical formulae to calculate trees per hectare, basal area per hectare and volume per hectare.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Field Assignments and Compilations	65%
Final Exam	20%
Midterm Test	15%

Date:	June 17, 2020
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.

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