

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Silviculture 2
CODE NO. : NRT 239 **SEMESTER:** 3
PROGRAM: Forest Conservation
AUTHOR: Brent Attwell
DATE: August 2013 **PREVIOUS OUTLINE DATED:** New Course
APPROVED:

| | | |
|-------------------------|----------------------------|-------------|
| | Dean Colin Kirkwood | DATE |
| TOTAL CREDITS: | 4 | |
| PREREQUISITE(S): | Silviculture 1 | |
| HOURS/WEEK: | 4 | |

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I. COURSE DESCRIPTION:

A continuation of Silviculture I with an additional added emphasis on silvicultural assessments that forest technicians carry out. Reforestation audits, regeneration surveys, pre harvest stand analysis and others will be carried out with the use of handheld GPS systems to assist in planning and monitoring silvicultural effectiveness on crown and private land.

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| II. | LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE: | |
| | <p>Upon successful completion of this course, the student will demonstrate the ability to:</p> <ol style="list-style-type: none"> 1. Be able to participate in carrying out silvicultural operations 2. Assist in planning silvicultural operations 3. Identify key legislation applicable to practicing silviculture in Ontario 4. Implement extensive , intensive and elite silvicultural practices in compliance with the Crown Forest Sustainability Act. | |
| | 1. | <p>Explain why accurate forest surveys are critically important to the practice of Sustainable Forestry in Ontario</p> |
| | | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • outline legislation • describe responsibilities for Silviculture Effectiveness Monitoring in forest management and outline the process involved in its implementation • Understand the components of silvicultural contracts and their development. • Be able to abide and surpass Ontario safety regulations in every forest scenario or work. • Limitations and successes of Silviculture practices on private land. <p>This learning outcome will represent 15% of the course grade.</p> |

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| 2. | Demonstrate the ability to conduct and administrate an operational tree plant |
| | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Select planting stock to meet specific forest regeneration objectives • Develop contracts for the production and planting of planting stock • Integrate tree planting with other forest management activities • Demonstrate the proper care and handling of planting stock • Demonstrate the proper use and care of tree planting equipment • List and identify operational tree plant strategies including microsite selection, spacing, planting technique, selection of tools and planting faults • Describe a minimum of 2 planting assessment procedures <p>This learning outcome will constitute 15% of the course grade</p> |
| 3. | Plan and conduct pre-commercial tending operations |
| | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Plan brushing, pre commercial thinning and spacing operations • Calculate optimal spacing ratios for crop tree release operations in hardwoods • List factors to consider when determining the feasibility of conducting pruning, thinning operations • List and describe how spacing can affect forest tree growth <p>This learning outcome will constitute 15% of the course grade</p> |
| 4. | Understand why vegetation control is necessary for long-term successful management |
| | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Identify and list vegetation competitor species • Demonstrate knowledge of silvics of competitor species • Describe pesticide application techniques and equipment • Demonstrate a complete understanding of pesticide environmental and human health hazards • List and compare non chemical to chemical methods of pest management used in forestry • List major invasive species and control methods in S. Ontario |

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| | | <p>woodlots</p> <p>This learning outcome will constitute 10% of the course grade</p> |
| | 5. | <p>Determine how successfully an area is regenerating to suitable tree species (Silviculture Effectiveness Monitoring)</p> |
| | | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Understand why we carry out regeneration and free to grow surveys and their methodology • Describe the features of a regeneration survey and a free to grow survey • Carry out and compile a regeneration survey using well spaced free growing regeneration assessment procedures <p>This learning outcome will represent 15% of the course grade.</p> |
| | 6. | <p>List and define selected principals and practices used in tree improvement</p> |
| | | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Identify tree seed zones and the effects of provenance • Identify plus tree characteristics • List and describe the reasons for setting up a seed orchard • Briefly describe the theoretical basis for tree improvement • List the characteristics of clonal and seedling seed orchards • Define the purpose for and the design of a family test plot <p>This learning outcome will constitute 10% of the course grade</p> |
| | 7. | <p>Be able to predict proper timing for commercial thinning, group selection and shelterwood applications</p> |
| | | <p><u>Potential Elements of the Performance:</u></p> <ul style="list-style-type: none"> • Develop an understanding for Stand Density Index's. • Write crop plans for specific stands and determine timing and volume estimates for thinning. • Be able to inventory and predict future thinnings in Jack and Red Pine stands • Understand prescriptions for and be able to identify and apply group selection for mid-tolerant tree species |

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| | | This learning outcome will represent 20% of the course grade. |
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III.

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| TOPICS: | |
| 1. | Tree planting |
| 2. | Forest tending operations (PCT/crop tree release/aerial spraying) |
| 3. | Plantation thinning surveys |
| 4. | Mid-tolerant management |
| 5. | Private land silviculture |
| 6. | Silviculture effectiveness monitoring |
| 7. | Tree Improvement |
| 8. | Vegetation Management |

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

None

V. EVALUATION PROCESS/GRADING SYSTEM:

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| Field Trip Assignments | 70% |
| Guest speaker summaries | 5% |
| Exam | 25% |
| Total | 100% |

The following semester grades will be assigned to students:

| Grade | <u>Definition</u> | <i>Grade Point Equivalent</i> |
|--------------|--------------------------|-------------------------------|
| A+ | 90 – 100% | 4.00 |
| A | 80 – 89% | |

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| B | 70 - 79% | 3.00 |
| C | 60 - 69% | 2.00 |
| D | 50 – 59% | 1.00 |
| F (Fail) | 49% and below | 0.00 |
| CR (Credit) | Credit for diploma requirements has been awarded. | |
| S | Satisfactory achievement in field /clinical placement or non-graded subject area. | |
| U | Unsatisfactory achievement in field/clinical placement or non-graded subject area. | |
| X | A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. | |
| NR | Grade not reported to Registrar's office. | |
| W | Student has withdrawn from the course without academic penalty. | |

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.