

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: NURSERY OPERATIONS
Code No.: FOR 355-4
Program: FORESTRY
Semester: V
Date: DECEMBER 1987
Author: M. HARVEY

New: _____ Revision: X

APPROVED:


Chairperson

Dec 11/87
Date

CALENDAR DESCRIPTION

NURSERY OPERATIONS

FOR 355-4

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS:

This course is designed to give students a good understanding of the principals and practices used in the production of container and bareroot forest tree nursery stock.

METHOD OF ASSESSMENT

Essay	15%
Project	15%
Labs	20%
Quizzes	5%
Tests	40%
Greenhouse Practice	5%

	100%

To successfully complete the course, students must have a passing grade in both lab and lecture tests.

A+ =	90-100%
A =	80-89%
B =	70-79%
C =	60-69%
R =	less than 60%

Projects, Laboratory Reports and Essays must be completed on the due date or:

- i) they may not be accepted,
- ii) marks will be deducted at a rate of 10% for each school day that assignments are overdue.

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LECTURE SERIES

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	1	Introduction .Overview and survey of nurseries in Canada
2	1	Nursery Location, Design, Function .Defining factors affecting location and design of nurseries .Identification of major physical nursery components and stock types
3	2	Biology of Seeds and Seed Collection .Structure and function of tree seed .Seed collection .Cleaning storage, stratification .Germination testing .Inspection and Certification
4	3	Biology of Nursery Stock .Physiological processes .Morphological attributes .Dormancy and growth phases
5	2	Vegetative Propagation .Cuttings .Mist propagation .Rooting .Growth regulators .Grafting .Micropropagation
6	3	Soil Fertility and Fertilizers .Soil amenders .Soil analyses and sampling .Soil ph .Soil salts and conductivity .Soil management .Liquid and solid fertilizers .Calculating fertilizer requirements

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
7	3	Diseases, Insect and Weed Pests <ul style="list-style-type: none">.Identification of major weed species, insects and biotic and non biotic diseases.Mechanical, biological and chemical control.Nutrient deficiencies.Safety and licensing requirements for chemical applications
8	4	Bareroot Production <ul style="list-style-type: none">.Preparation of nursery soils, nursery beds, seeding, mulching, soil management, density control.Production scheduling, application of pest control products, fertilizers, root pruning and wrenching, irrigation, transplanting, specialized equipment.Growth monitoring, readiness for lifting, culling grading, packing, storage and storage physiology, transportation
9	4	Container Production <ul style="list-style-type: none">.Greenhouse structures, glazing, ventilation, heating, cooling, lighting, watering, fertilizing systems, CO₂ enhancements, shading, handling systems.Container types and stock types.Soil mixes, filling and seeding, germination, thinning.Production scheduling, control of growth, hardiness and dormancy.overwintering, shade frames and cold storage

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TOPIC NO.	PERIODS	TOPIC DESCRIPTION
10	2	Size Class Standards and Stock Quality .Determining size classes and seedling quality .Root regeneration testing .Plant moisture stress .Dry weights .Freezing tests
11	3	TESTS AND REVIEW

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REQUIRED TEXT BOOKS

Armson, K.A. and Sadreika, V. 1979. Forest Tree Nursery Soil Management and Related Practices (Metric Edition). Public Service Centre, Ontario Ministry of Natural Resources, Toronto, Ontario. 179p.

Duryea, Mary L., ed. 1985. Evaluating Seedling Quality: Principles, Procedures and Predictive Abilities of Major Tests. Workshop held October 16-18, 1984. Forest Research Laboratory, Oregon State University, Corvallis.

REFERENCES

Duryea, M.L. and Landis, T. (eds.) 1984. Forest Nursery Manual: Production of Bareroot Seedlings. Martinus Nijhoff/Dr. W. Junk Publishers. The Hague/Boston/Lancaster, for Forest Res. Lab. Oregon State University, Corvallis 386p.

Carlson, L.W., 1983. Guidelines for Rearing Containerized Conifer Seedlings in the Prairie Provinces. Revised. Environment Canada, Can. For. Serv. North, Forest Research Centre, Edmonton Alberta. Info Rep. NOR-X-214E 64p.

Day, R.J., Bunting, W.R., Glerum, C., Harvey, E.M., Pohill, B., Reese, K.H., Wynia, A. 1985. Evaluating the Quality of Bareroot Forest Nursery Stock. Aird P.L. ed. Ontario Ministry of Natural Resources

Sutherland, J.R., and Eerden, E.V. 1980. Diseases and Insect Pests in British Columbia Forest Nurseries. Joint Rep. B.C. Ministry of Forests and Canadian Forest Service, No. 12. 55p.

Tinus, R.W. and McDonald, S.E. 1979. How to Grow Tree Seedlings in Containers in Greenhouses. USDA For. Serv. Gen. Tech. Rep. RM-60, 256p.

U.S. Department of Agriculture. 1974. Seeds of Woody Plants in the United States. U.S. Government Printing Office. Washington, D.C. Agriculture Handbook 450, 883p.