revised July '86

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: FOREST PATHOLOGY

Code No.: FOR 114-3

Program: FORESTRY

Semester: IV

Date: DECEMBER, 1985

Author: G. STONE

New: _____ Revision: X

APPROVED: _____ Dec 9/85
Chairperson Date

CALENDAR DESCRIPTION

FOREST PATHOLOGY	FOR 114-3
Course Name	Course Number

PHILOSOPHY/GOALS:

The purpose of this course is to familiarize the student with forest tree diseases; their identification, life history, control and impact on the practice of forest management.

METHOD OF ASSESSMENT (GRADING METHOD):

Evaluation:	Pathology Notebook	10% of total mark
	A-V Presentation	15% of total mark
	Assignments	35% of total mark
	Slide test	20% of total mark
	Specimen test	20% of total mark
		100%

Grading:

A - 90% exceptional
B - 75% consistently outstanding
C - 60% basic understanding of course material

I - Incomplete

Each student must pass each item listed under evaluation. Marks will then be averaged to give the final mark. A student receiving an "I" in any aspect of the course will be given an opportunity to rewrite. The opportunity to rewrite is a privilege and not a right.

List of Assignments:

Fungus Collection
Fungus Key
Pathology Notebook
Chart - Biotic Diseases
Chart - Abiotic Diseases
Decay Identification
Cull Survey of College Woodlot
Woodlot Treatment
Succession of Organisms
Audio-Visual Presentations

TEXTBOOK(S):

Forest Pathology Lab Manual, Campus Bookstore.

Lincoff, G. H. 1981 "The Audobon Society" - Field Guide, North American Mushrooms. Alfred A. Knopf, New York.

Manion, Paul D. 1981. "Tree Disease Concepts".

LEARNING OBJECTIVES

OBJECTIVES	CONDITION	MODULE #
Classify forest shade/tree diseases using six different methods - part of tree, taxanomic product, infectious/non-infectious, parasitic/saprophytic, necrotic/ atrophic/hypertrophic.	- Field, slides, specimens	2970.01
Identify 10-15 fungus diseases of Ontario to scientific name - modified according to projected forecast.	- Field, slides, specimens	2970.01
Identify & describe types of infectious diseases (forest/ shade) fungi, bacteria, nematodes, viruses, mycoplasma & seed plants.	- Chart	2970.01
Identify and describe three types of stress (non-infectious diseases) of forest/shade trees - moisture, temperature, & soil.	- Chart	2970.01
State & explain natural succession of infectious disease organisms following: a) physical injury b) insect attack and c) fire.	- Given field samples	2970.01
Recognize and describe life cycles of 10-15 infectious forest/shade tree diseases of Ontario using signs and symptoms.	- Slides, specimens, drawings	2970.01 2970.04
List and describe equipment and procedures involved in collecting, preserving and recording forest/shade tree data - a) forest insect & disease survey b) shade tree diagnosis.	- Collection/diagnosis in field	2970.01

OBJECTIVES	CONDITION	MODULE #
Describe the purpose of the following acts as they apply to forest pathology: - Pest Control Products Act - Forest Tree Pest Control Act - Environmental Protection Act	- Classroom	2970.02
Collect & identify at least 10 common fungi in Ontario.	- Key	2970.01
Describe sequence of sexual and asexual stages in growth of one important fungus disease for each of the two most common classes of fungi - a) ascomycetes b) basidiomycetes	- Microscope	2970.04
List and describe "X" methods of biological & silvicultural control of forest/shade tree diseases.	- Classroom	2970.04
Describe impact of temperature, fungus diseases.	- Classroom	2970.01
List & describe "X" silvi-cultural methods for prevention of forest/shade tree diseases.	- Classroom	2970.02
Describe ways in which forest/shade tree diseases change species composition & resulting economic & aesthetic values with examples of each.	- Classroom	2970.01
Research forest/shade tree pathology literature & report on specific problem or issue.	- Classroom, Library	2965.01 2965.03

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LEARNING OBJECTIVES

OBJECTIVES	CONDITION	MODULE #
Prepare audio-visual materials for a forest/shade tree pathology presentation to a specific audience.	- Classroom	2965.02 2965.04 2965.05
Collect & record data for a cull survey according to specified sample design.	- Field, Classroom	2967.04 2967.01
Describe use of fungicides to eradicate or control tree diseases in the field & under controlled conditions.	- Field, Classroom	2968.07
Define role of a forest technician in relation to the forest insect & disease survey.	- Classroom	2965.04

collection.

2	1	Infectious Diseases - fungi, bacteria, virus, parasitic seed plant, mycoplasma, nematodes.
3	1	Symptomatology - signs, symptoms, slides, specimens, drawings and descriptions.
4	3	Abiotic Agents of Tree - slides and specimens, key construction, design a key to separate.
5	2	Classification and Reproduction - description and recognition, signs and symptoms labelled drawings, slides, life cycles, design a key to separate four classes of fungi.
6	1	Succession of Organisms - description, examples, assignment.
7	1	Control of Forest Diseases - exclusion, eradication, protection, resistance, assignment.
8	1	Mycorrhizal Fungi - types, mode of action, association cycle, importance and recognition.
9	1	Foliage Diseases - types, mode of action, disease cycle, symptoms, recognition, examples, control.
10	1	Rust Diseases - types, mode of action, disease cycle, diagnosis, examples.
11	1	Canker Diseases - types, mode of action, disease cycle, symptoms, diagnosis, examples, control.

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
12	1	Vascular Wilt Diseases - types, mode of action, disease cycle, symptoms, diagnosis, example, control.
13	1	Wood Decay - types, mode of action, disease cycle, symptoms, recognition, identification based on fruiting bodies, examples, role in succession, control.
14	1	Wood Stain - types, mode of action, disease cycle, symptoms, examples.
15	1	Root Rots - types, mode of action, disease cycle, symptoms, diagnosis, examples, control, forest practices.
16	1	Parasitic Seed Plants - types, mode of action, disease cycle, symptoms, examples and control.
17	1	Decline Diseases - decline syndrome, symptoms, examples, ecological role.
18	1	Seedling Diseases - types, damping off, root rots, foliage and stem.
19	1	Impact of Forest Tree Diseases on Forest Management in the Boreal Region
20	1	Concept of Urban Tree Management
21	2	REVIEW
22	2	FIELD TRIP
23	2	TESTS - Slide test and specimen test.