Forest Resources Technology Program
FRST 351 - Forest Pathology
Course Outline

Term: Fall
Lecture/Lab: TBA
Instructor: TBA

COURSE INTRODUCTION
An introduction to the major forest tree diseases in B.C., including life cycles, damage, identification, and control methods. This includes coverage of fungal pathogens, parasitic plants, wildlife, and climatic disorders. The detection, assessment and treatment of significant pests within these groups are covered in detail. Prerequisite knowledge of forest ecology, plant physiology and dendrology is an asset. This course focuses on the significant disease agents in the forests of BC.

COURSEFORMAT (3:0:1)
Learning will be accomplished through a variety of activities, including
- attending lectures
- in-class discussions
- online discussions (D2L)
- ID & diagnostic exercises
- field trips
- reading assignments

TEXTS & SUPPLIES

SCOPE AND CREDIT
This 3 credit course is accepted towards the following:
- Bachelor of Science
- Bachelor of Science in Fisheries & Aquaculture
- Bachelor of Natural Resource Protection
- Bachelor of Arts

stem rust on pine
LEARNING OUTCOMES

Course Specific Outcomes

Upon successful completion of the course, the student will:

1. **Assess the potential hazards of working in the forest; demonstrate safe work procedures for carrying out tasks, and use appropriate personal protective equipment requirements and describe emergency procedures.**

2. **Define and use technical terms applicable to forest pathology in conversation with peers and in technical reports.**

3. **Recognize the presence of disease in forest trees and identify the causal agent based on the presence of signs; utilize expert systems to diagnose possible causal agents based on observed symptoms.**

4. **Name and rank the most significant pathogens for the important conifers of BC.**

5. **Describe the role of pathogens in forest ecosystems.**

6. **Describe the potential impact of pathogens as they relate to various forest management objectives.**

7. **Describe how forest pathogens are addressed in forest assessments (e.g. site plans, stand management prescriptions, timber cruising and silviculture surveys).**

8. **Describe how important forest tree diseases develop over the life of a stand.**

9. **Develop effective management options that are environmentally safe and economically feasible, given a stand/disease situation, for the major pathogens listed below:**
   - **Root Disease** (Phellinus, Armillaria, Tomentosus, Annosus, Black Stain, Rhizina)
   - **Dwarf Mistletoes** (Hw, Pl, Lw &Fd)
   - **Stem Rugs** (white pine blister rust, western gall rust, comandra and stalactiform stem rusts)
   - **Wilts & Cankers** (Atropellis, Dutch elm disease)
   - **Wood Decay**
Broad Level Outcomes

In addition to the subject-specific learning outcomes listed above, broad-based program learning outcomes will be covered. Upon successful completion of this course students will have furthered their ability to:

1. **Analyze information and think critically** (i.e. consider the life requirements of pathogens, their potential impact on management objectives, and determine viable treatment options).

2. **Utilize digital resources** to effectively search for information, diagnose forest health problems and create a common learning resource.

3. **Read, comprehend and summarize** material appropriate to the field of forestry - specifically forest health.

4. **Work collaboratively** with others - specifically to utilize a wiki to “write collaboratively” with classmates to create articles and participate in online discussions.

SAMPLE EVALUATION*

- 10% Disease Collection
- 15% Wiki Assignment
- 15% Quizzes
- 15% Midterm
- 10% ID/ Diagnostics Test
- 25% Final
- 10% Professionalism

Quizzes will consist of short answer questions that will cover recent lecture material, reading assignments and/or identification of specimens. Any missed exams or quizzes will receive a grade of zero.

Professionalism will primarily consider in-class and online participation, as well as general preparedness for class.

* Evaluation break-out is subject to change.

ACADEMIC POLICIES

For details regarding academic policies and grade break-out refer to the Forestry Portal.
## SAMPLE SCHEDULE - subject to change

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| **1** | No Class - Ecosystem Course | Course Intro  
*Online & F-2-F Discussions*  
Introduction to forest health |
| **2** | *Tree Doctor overview*  
Dwarf mistletoes - biology | *The Wiki*  
Dwarf mistletoes - management |
| **3** | Field Trip - forest pathology | *Online Reference Sources*  
Basic fungus biology |
| **4** | Forestry 101  
FRST 291 - Interior field trip | No Class  
FRST 291 - Interior field trip |
| **5** | Wood Decay | Wood Decay  
Root diseases - Overview |
| **6** | *Course Feedback*  
Root Disease - Phellinus | *Self-Assessment*  
Root diseases - Armillaria |
| **7** | No Class  
FRST 235 Field Trip: MASS | Midterm |
| **8** | Field Trip: forest pathology | Root diseases - tomentosus, annosum, schweinitzii, black stain |
| **9** | Stem rusts - basic biology, western gall rust | Stem rusts - comandra, stalactiform & broom rusts |
| **10** | White pine blister rust | *Diagnosis: digital and otherwise*  
White pine blister rust |
| **11** | Holiday - Remembrance Day | Foliar & Seedling diseases |
| **12** | Wilts & Cankers | Abiotic & Declines & Wildlife |
| **13** | Abiotic & Declines & Wildlife | *Course & Self-Assessment*  
Review - Pathological Thinking |

Dec Study Days  
Final exam dates to Dec - do NOT book any vacation time