



School of Science
RRMT 235
Forest Management
Term: Fall 2024
Number of Credits: 3

Course Outline

INSTRUCTOR: Merrick McKinley

E-MAIL: mmckinley@yukonu.ca

CLASSROOMS: A2101 (Lecture)

PHONE: (867) 668-8887

OFFICE HOURS: Scheduled

TIME: Monday and Wednesday, 1:00 – 2:20 PM (Lecture); Friday 9:00 – 11:50 AM (Lab)

DATES: September 4th to December 9th, 2024

COURSE DESCRIPTION

This course provides an introduction to forest ecology and the multi-nationally accepted principles and practices of Sustainable Forest Management (SFM). Concepts in ecology, such as energy and nutrient flows, disturbance and succession, ecosystem classification, and climate change impacts will be explored to better understand the foundations of management actions and outcomes. SFM will be introduced and explored, including the management practices required to ensure sustainable use of all forest resources. A range of timber and non-timber forest values are explored, highlighting the interdisciplinary nature of forest management. Course participants will also gain an appreciation for the wonders of wood, and its potential to replace unsustainable, non-renewable resource use.

The lab component of the course will focus on hands-on, practical aspects of ecology and management, such as soils, tree and plant species identification, wood growth and structure, forest disturbances, and ecosystem classification. Forest management field methods, such as measurement methods and tools, sampling protocols, and mapping, will be introduced and applied to a practical cumulative assignment. Most of the labs will occur outside in the forest environment.

COURSE REQUIREMENTS

Prerequisites: RRMT 125, RRMT 121, or BIOL 101, and RRMT 122 or GEOG 250, or permission of the instructor

Cross-listed Courses: RENR 322 for Fall 2022

EQUIVALENCY OR TRANSFERABILITY

Receiving institutions determine course transferability. Find further information at:

<https://www.yukonu.ca/admissions/transfer-credit>

University of Northern British Columbia (UNBC): FSTY 2XX (3)

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Describe the characteristics and ecology of boreal forests.
- Describe the role of natural disturbance (fire, insects, disease etc.) in shaping boreal forests.
- Explain how forested and other ecosystems are classified.
- Describe forest management policy and legislation in the Yukon.
- Describe what is meant by ecosystem-based approach to managing for biological diversity and other non-timber values.
- Understand the principles of forest planning and management.
- Describe the various silvicultural systems, reforestation, and stand tending practices used in operational forestry and evaluate their appropriateness for boreal forests and for different objectives.

COURSE FORMAT

Weekly breakdown of instructional hours

Lecture: two 1.5 hr classroom-based lectures per week (3hrs total)

Laboratory: one 3 hr outdoors-based lab per week (3 hrs total)

Delivery format

Lectures and laboratory sessions for the Fall 2024 offering of this course will be delivered in a face-to-face format.

Lectures will include a mix of presented material, group discussions, and in-class activities.

Labs will be primarily hands-on activities in an outdoor setting.

EVALUATION

Assignment 1	25%
Assignment 2	25%
Lecture Quizzes	10 %
Lab Quizzes/Practical Exam	20 %
Final Exam	20%
Total	100%

Assignments

Assignment 1: Presentation and Report

25%

Students have the opportunity to select a topic of their own particular interest from within the wide field of Forest Ecology and Management to focus on for self-directed learning. The topic chosen must be approved by the instructor. A written report of 5-10 pages is required. Students will prepare a brief presentation to share their learning with the rest of the class and promote their own learning.

Grading will be broken down as follows:

- 1) Topic choice and proposal (5%)
- 2) Final report (10%)
- 3) Presentation in class (10%)

Assignment 2: Site Plan or Field Research Project

25%

Students will apply their learning of forest management planning and operations to prepare a Site Plan for a small hypothetical harvest block within a timber harvest area. A local forested area with easy access will be selected for this assignment. The site plan must be presented in the standard format in use in the Yukon, with a short, written report and a detailed site map. Students will be required to review relevant legislation, regulations, and Forest Management Plans, and to conduct all necessary field work to gather site and stand data and survey data required for mapping. Field work will be conducted in groups, but the Site Plan must be submitted individually.

Alternatively, students may choose to pursue a research project involving the collection and analysis of field data using standard forestry field equipment. The research project option must be chosen in consultation with the instructor.

Lecture Quizzes

10%

A series of 2 lecture quizzes, each covering the content of one section of the course.

Lab Assessments

The lab component of the course focuses on practical knowledge and field skills. Assessments will focus on interpretations of field guides and manuals and on the application of standard field skills.

Lab Quizzes

10%

There will be 2 lab written quizzes covering field-related concepts and the interpretation of field guides and manuals. (5% each)

Lab Practical

10%

There will be a final lab practical exam to assess the application of critical field skills in a field-based setting. The lab practical will take place as the last lab session of the course.

Final Exam

20%

There is a written final exam to assess learning. It will consist of a variety of short- and long-answer questions and will include practical applications such as diagram and map questions. See the School of Science final exam schedule for date and location.

COURSE WITHDRAWAL INFORMATION

Refer to the YukonU website for important dates.

TEXTBOOKS & LEARNING MATERIALS

No textbook required. Readings, resources, and lecture material will be provided on Moodle.

www.yukonu.ca

ACADEMIC INTEGRITY

Students are expected to contribute toward a positive and supportive environment and are required to conduct themselves in a responsible manner. Academic misconduct includes all forms of academic dishonesty such as cheating, plagiarism, fabrication, fraud, deceit, using the work of others without their permission, aiding other students in committing academic offences, misrepresenting academic assignments prepared by others as one's own, or any other forms of academic dishonesty including falsification of any information on any Yukon University document.

Please refer to Academic Regulations & Procedures for further details about academic standing and student rights and responsibilities.

ACCESSIBILITY AND ACADEMIC ACCOMMODATION

Yukon University is committed to providing a positive, supportive, and barrier-free academic environment for all its students. Students experiencing barriers to full participation due to a visible or hidden disability (including hearing, vision, mobility, learning disability, mental health, chronic or temporary medical condition), should contact [Accessibility Services](#) for resources or to arrange academic accommodations: access@yukonu.ca.

TOPIC OUTLINE

Date	Lecture/Lab	#	Topic
Wednesday, September 4	Lecture	1	Global Forest Biomes and Canadian Forests
Friday, September 6	Lab	1	Dendrology
Monday, September 9	Lecture	2	Boreal Biome and State of the World's Forests
Wednesday, September 11	Lecture	3	Soils and Ecosystem Classification
Friday, September 13	Lab	2	Soil
Monday, September 16	Lecture	4	Forest Ecology
Wednesday, September 18	Lecture	5	Disturbance Ecology
Friday, September 20	Lab	3	Ecological Land Classification
Monday, September 23	Lecture	6	Climate Impacts
Wednesday, September 25	Lecture	7	Quiz #1
Friday, September 27	Lab	4	Wood Structure and Tree Growth
Monday, September 30	YukonU Closed		National Day for Truth and Reconciliation
Wednesday, October 2	Lecture	8	Introduction to Forest Management
Friday, October 4	Lab	5	Lab Quiz #1
Monday, October 7	Lecture	9	Sustainable Forest Management and Criteria and Indicators

Date	Lecture/Lab	#	Topic
Wednesday, October 9	Lecture	10	Forest Resources Planning Processes
Friday, October 11	Lab	6	Inventory
Monday, October 14	YukonU Closed		Thanksgiving Day
Wednesday, October 16	Lecture	11	Forest Resources Act - Guest Lecturer
Friday, October 18	Lab	7	Field Measurements
Monday, October 21	Lecture	12	Forest Management Branch Site Visit
Wednesday, October 23	Lecture	13	Tenure and Site Plans and Block Layout
Friday, October 25	Lab	8	Inventory and Ground Call
Monday, October 28	Lecture	14	Silvicultural Systems
Wednesday, October 30	Lecture	15	Harvest Systems
Friday, November 1	Lab	9	Harvest Systems
Monday, November 4	Lecture	16	Quiz #2
Wednesday, November 6	Lecture	17	Timber Cruising
Friday, November 8	Lab	10	Timber Cruising
Monday, November 11	YukonU Closed		Reading Week
Wednesday, November 13	YukonU Closed		Reading Week
Friday, November 15	YukonU Closed		Reading Week
Monday, November 18	Lecture	18	Intro to Fire Management - Guest Lecturer
Wednesday, November 20	Lecture	19	Fire Behavior
Friday, November 22	Lab	11	Lab Quiz #2
Monday, November 25	Lecture	20	Forest Health
Wednesday, November 27	Lecture	21	Emulating Natural Disturbance
Friday, November 29	Lab	12	Silviculture
Monday, December 2	Lecture	22	Review of lab quizzes and preparation for lab practical
Wednesday, December 4	Lecture	23	Preparation for Exam
Friday, December 6	Lab	13	Lab Practical Exam
Monday, December 9	Lecture	24	Assignment 1 Presentations