BIOL 418 FOREST ECOLOGY
Fall 2024
Tues, Wed, Fri: 10:30 am – 11:20 pm
Cunningham Building (CUNN) Rm. 146

INSTRUCTORS: Dr. Barbara Hawkins & Dr. Paul de la Bastide

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Office hours by arrangement – please email us to arrange. We'd love to chat!

COURSE CO-ORDINATOR: Dr. Barbara Hawkins bhawkins@uvic.ca

TEACHING ASSISTANT: Lise Nehring lisenehring@uvic.ca
Labs: Tuesday & Wednesday, 2:30-5:30 pm

COURSE OBJECTIVES: To explore the structure and function of forest ecosystems at the tree, stand and landscape scale, including: effects of the abiotic and biotic environment upon plant abundance, distribution and diversity; nutrient, carbon and water cycles; population and community ecology; disturbance; forest management and conservation; and climate change. The focus will be on forests of British Columbia, but Canadian and global forest ecosystems are discussed.

INTENDED LEARNING OUTCOMES: By the end of the course, students should be able to think, write and speak effectively about:

- the structure and function of forest ecosystems locally, nationally and globally;
- forest soil properties and processes, hydrology, and water quality;
- biogeochemical, nutrient, carbon and water cycles in forests;
- ecological concepts and principles including forest plant and animal communities, population dynamics, competition, disturbance and succession;
- the effects of climate, moisture, nutrients, genetics, fire, insects and diseases on tree physiology and forest health and productivity;
- the biogeoclimatic classification system of B.C.;
- the practice of vegetation surveys.

TERRITORY ACKNOWLEDGEMENT: *We acknowledge and respect the Lək̓ʷəŋən (Songhees and Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.*

First Peoples have had a close relationship with the forests of this land for millennia. We understand that Indigenous Knowledge of forest organisms and processes is based on values including kinship with nature, humility, and reciprocity. We should be open to the many different ways of viewing the forests around us and eager to seek out knowledge of all kinds.

COURSE READINGS: There is no textbook for this course. Course readings for specific lectures will be posted on *Brightspace*.

LAB MANUAL: Lab materials will be posted weekly on Brightspace

COURSE FORMAT: Dr. Hawkins is the course co-ordinator. Please contact her with logistica questions. Drs. Hawkins and de la Bastide will alternate lectures for different sections of the course as indicated in the course outline. The slides for each lecture will be made available on the course *Brightspace* site. The lectures will NOT be recorded, thus it is strongly recommended that students attend lectures and take notes. All exams will be based on lecture material, and any assigned readings will help reinforce the concepts. Lise Nehring will coordinate and teach the labs.

LABS: Labs begin on Tuesday, Sept. 10th, 2024. There are two lab sections (B01 – Tue 2:30-5:30 and B02 - Wed, 2:30-5:30). Please attend only the lab section in which you are registered. Most labs will take the entire three hours and many are outdoors, so come prepared with appropriate clothing, rainwear and footwear. Lab material and assignments will be posted the day before your lab.

The laboratory portion of the course is worth 30% of your final grade. If you miss more than three labs for any reason, even with a medical excuse, you will receive a failing grade (N) in the course.

EVALUATION:	Four reports on guest lectures (2% each)	8%
	Two midterms (13% each)	26%
	Final examination (cumulative)	36% (required)
	Lab	30% (required)

There will be no deferred or supplemental midterm or lab exams. If you miss one midterm, the midterm taken will be worth 19% and the final exam, 43%. If you miss two midterms, the second missed midterm will be given a mark of zero (0) and the final exam will be worth 49%. Deferred final exams will only be considered if a formal Request for Academic Concession is provided.

GRADE CONVERSION:

A+ 90-100%;	A 85-89.5%;	A- 80-84.5%;
B+ 77-79.5%;	B 73-76.5%;	B- 70-72.5%;
C+ 65-69.5%;	C 60-64.5%	
	D 50-59.5%;	
	F <49.5;	

N Failure to complete the lab requirements or the final exam will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. N is a failing grade and factors into GPA as a value of 0.

PROPOSED COURSE OUTLINE – FALL 2024

Date	Lecture Topics		Lab topics (weekly)
Sep 4	Introduction to the course and forest ecology	BH	No lab
6	Attributes and structure of forest ecosystems		
10	TBA		BC forests; forest
11	Global forest biomes, forest regions of Canada,	PB	classification and
13	forest zones of B.C., the BEC system		variation
17	Primary productivity – transfer and storage of energy:	BH	Methods of forest
18	Sources of energy, trophic chains, food webs, ecological		community
20	pyramids, energy & carbon flow, production ecology		sampling
24	Biogeochemical cycling & nutrition	PB	Begin forest
25	Forest soil nitrogen cycling and bacterial communities	TBA	community
27	"		sampling
Oct 1	**Oct 1 – Midterm 1**	PB	Forest community
2	Physiography & soils:		sampling
4	Elevation, slope, soil physical and chemical properties, soil microbes and fauna		
8	Mycorrhizal ecology – *Guest lecture Dr. J.M. Kranabetter*	BH	Forest community
9	Ecological roles of light, temperature and water		sampling
11	"		
15	Ecological roles of light, temperature and water	BH	Forest community
16	"		sampling
18	Acclimation, adaptation and evolution – forest variation		
22	Assisted migration – *Guest lecture Dr. J. Degner*	BH	Paper discussion
23	Forest succession and gap dynamics		
25	Population & community ecology		
29	Population & community ecology	PB	Soil sampling
30	**Oct 30 – Midterm II**		
Nov 1	Natural disturbance – *Guest lecture – Dr. J. Antos*		
5	Sustainability of forest ecosystems – natural disturbance	PB	Lab report
6	Sustainability – climate change		discussion
8	Wind, fire, insects, pathogens -effects of disturbance on forests		
11-13	**Reading Break – no lectures or labs**		
15	Topics in forest ecology	BH	
19	Emerging forest pests and pathogens	PB	Paper discussion
20	"		
22	Sustainability – resource management (flora & fauna)		
26	Invasive species, historical and current	PB	Lab report
27	Forest fauna – *Guest lecture Dr. Melissa Todd & Louise Waterhouse*		question drop-in
29	Invasive species, historical and current		
Dec 3	Retention forestry – *Guest lecture – Dr. J.M. Kranabetter*		Lab report due
4	Discussion of course content and final exam		

Academic Policies and Regulations:
Undergraduate policies and academic regulations are described in the UVic Undergraduate Calendar. Please read very carefully the Policy on Academic Integrity, the Academic Concession Regulation/Guidelines, and Academic Important dates.
*Academic Integrity***:** Students are required to abide by all academic regulations set as set out in the University calendar, including standards of academic integrity. Violations of academic integrity (e.g. cheating and plagiarism) are considered serious and may result in significant penalties. The exams (quizzes, midterms and final exam) must all be completed **individually** and not with a friend or classmate or a group. You are prohibited from sharing any information about the exam with others.
Academic Concession Regulation/Guidelines:
Please refer to the links below when determining what is a 'valid reason' to request an Academic Concession and the process for requesting a concession.
Academic Concessions Regulation and Academic Concession Guidelines
Academic Important Dates:
Check here. It is the student's responsibility to attend to Add/Drop dates published in the Calendar (last day to add courses – Jan 24, last day to drop without failure – Feb 29). Students must not assume they will be dropped automatically from any course they do not attend. It is also the students' responsibility to check their records and registration status.

UVic Services:
Centre for Accessible Learning (CAL) - UVic is committed to creating a learning experience that is as accessible as possible. If you are registered with the CAL and anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with the course instructor. If you are a student with a disability or chronic health condition, you can meet with a CAL advisor to discuss access and accommodations. https://www.uvic.ca/accessible-learning/index.php

Counselling Services - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. https://www.uvic.ca/services/counselling/

Elders in Residence - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students and others in Indigenous ways of knowing and being. https://www.uvic.ca/services/indigenous/students/programming/elders/index.php

Health Services - University Health Services (UHS) provides a full service, primary health clinic for students, and coordinates healthy student and campus initiatives.
http://www.uvic.ca/services/health/

Mental Health Supports - In addition to providing both face to face and online mental health resources through the Student Wellness Centre, a 24x7 phone & online student mental health resource and support program is available for all UVic students, no matter where they are located, at any time.
https://www.uvic.ca/services/counselling/resources/supportconnect/

Student Support for Online Technology
Learn Anywhere: https://onlineacademiccommunity.uvic.ca/LearnAnywhere/

Sexualized Violence Prevention and Response - UVic takes sexualized violence seriously. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). If you want to take part in the important prevention work taking place on campus, you can also contact the sexualized violence resource office in EQHR; Sedgewick C119, Phone: 250.721.8021, Email: svpcoordinator@uvic.ca