

Tree Biology

Lecture | Tue/Wed/Fri 1:30 pm | CUN146

Lab | Fri 2:30 - 5:20 pm | CUN118

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Trees are biologically interesting: they are at the size limits of what an organism can achieve on this planet, they don't move, but yet they can reproduce at great distance. These days we consider trees the bellweather of climate change, which also underscores the fact that humans see trees as reflecting their own lives, i.e. being rooted, ageing, representing important symbols. We turn to trees to improve our cities. At one level trees are an economic mainstay of Canada, at another they form keystone species in our ecosystems. In this course you will learn broadscale aspects of trees, such as biogeography, their responses to factors edaphic and biotic. You will learn other aspects in depth, such as conifer reproduction. There are labs and field trips to reinforce your first-hand experience and your skills. Will you miss the forest for the trees? Not by the end of this course!

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1. WHAT IS A TREE?



2-4. BIOGEOGRAPHY



5 & 6. PEOPLE & TREES



7. URBAN TREES



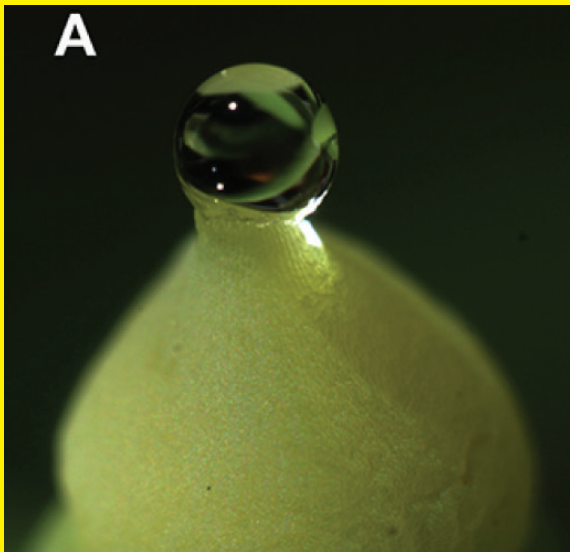
**8. ADAPTATION
& ACCLIMATION**



**9-14. TREE MORPHOLOGY
& ANATOMY**



**15-19. REPRODUCTIVE
BIOLOGY**



20. LEGUMINOUS TREES



21. HOW TO GIVE A TALK



22 & 23. ANNUAL CYCLES



24 & 25. SOIL AND NUTRIENTS



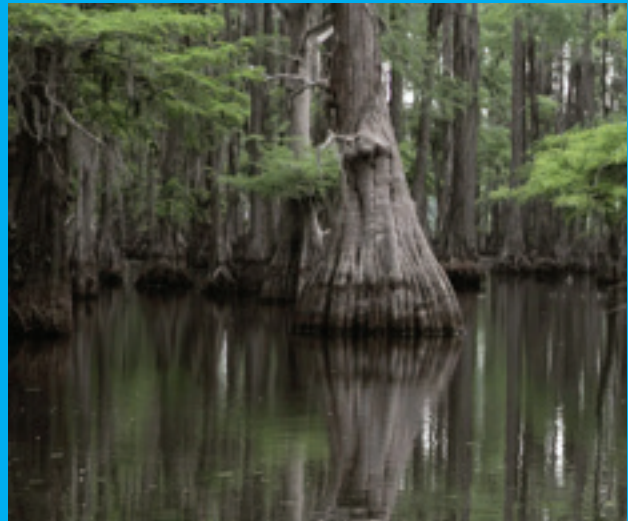
26 & 27. TREE-INSECT INTERACTIONS



28. DROUGHT



29. FLOODING



Important bureaucratic dates in the Fall Term 2023

September 20, Tuesday: Last day for 100% reduction of tuition fees for standard course fees. 50% of tuition fees will be assessed for courses dropped after this date.

September 23, Friday: Last day for adding this course.

September 30, Friday: Last day for paying fees without financial penalty.

October 10, Monday: Thanksgiving Holiday

October 11, Tuesday: Last day to drop courses for a 50% reduction of tuition fees. 100% of tuition fees will be assessed for this course dropped after this date.

October 31, Monday: Last day for withdrawing from course without penalty of failure.

November 9-11: Reading Break

November 11: Remembrance Day

December 5, Monday: Last day of classes.

Readings for Lectures 15 - 19

**Williams, Claire. 2009.
Conifer Reproductive Biology
– available as an ebook from the
UVic Library website**

Here's how you find the book

The section on reproductive biology has assigned readings from Claire Williams book Conifer Reproductive Biology, which can be found by following the instructions that follow: On the UVic Library home page, choose Search Options. Click on Books & Media. Click on it. Then look down the page and select Ebook collections. Choose Springer via Springer Link (the publisher of this book) and then a page appears from the company site with the alphabet across the top of the page. Choose the letter C. Then type 'conifer' in the search field and hit return. You will see the book pop up as option 2. Click on it: you will be directed to a page where your first choice is to 'Download book pdf.' That's what you do (it's free!). Ignore the purchase options. The book will download to your laptop or device.

Assigned pages: 39-121, 155-156



COURSE DETAILS

Instructor & Course Coordinator: Patrick von Aderkas **Email:** pvonader@uvic.ca
Instructor: Barbara Hawkins **Email:** bhawkins@uvic.ca
Teaching Assistant: Sarah Lane **Email:** slane@uvic.ca
Office hours: by appointment. Offices - PvA-PCH052; BH-CUN151; SL-CUN159

Prerequisite: Minimum B standing in Cell Biology.

Course philosophy: This course introduces students to a range of biological aspects that typify tree growth and their responses to abiotic and edaphic factors. These may be behavioural, molecular or morphological, to give only a few of the possibilities. We will consider features of trees that influence where they are found and how they integrate certain ecosystems. Lectures are supplemented with laboratories that provide experiential learning to improve comprehension and to help to develop scientific and practical skills.

Expectation in terms of number of hours per week

Reading Only one small part of the course has readings.

Safety Net

We would like everyone to succeed, so please avail yourself of these resources.
If you miss a class... lecture notes and/or slide decks will be available in Brightspace following every class.

Practice questions of the exact type in the quizzes will be posted regularly.

Recording Lectures: not in this course, as ECHO360 is problematic in CUN146



What you need to know about evaluation and grading

<i>Quizzes (best 4/5)</i>	48 %
<i>Essay</i>	20 %
<i>Oral Presentation</i>	7 %
<i>Laboratory</i>	25 %
Total	100 %

NB: There is no final exam

The Quiz mark is based on the best four out of five quizzes. Therefore, each quiz is worth 12 %. Quizzes will cover material covered in lecture as well as in any assigned readings. All quizzes will be online. Quizzes will be approximately 30 minutes each, but may vary at the discretion of the instructor. There will be no supplemental quizzes.

Missing a quiz:

If you expect to miss a quiz for any reason, please notify me and we will work out alternative arrangements. If you are not able to give prior notice, get in touch with me as soon as you are able.

Lab assignments	(relative value – percentage)
Tree Identification	40
Spruce tree dissection	15
Fruit Trees	5
Tree morphology	10
Culturally imp't trees	10
Wood anatomy	10
Mycorrhizae	10
Total	100

Essential requirements:

Quizzes, Essay and Laboratory are essential requirements for this course. Please note – We assign a zero for any missed elements. The official policy of the Faculty of Science, you must complete and pass the essential requirements to receive a grade. Otherwise an 'N' (for incomplete) will be given.

Grades at UVic are submitted as percentiles, which is how it will appear on the academic transcript. Percentiles above 0.5 % will be rounded up.

Final Exam: There is neither a final exam nor a supplementary exam.

Lecture Number	Day	Date	Title	Lab	Quizzes & Deadlines
1	W	Sept. 6	What is a tree?		
2	F	Sept. 8	tree biogeography	ID lab	
3	T	Sept. 12	tree biogeography		
4	W	Sept. 13	tree biogeography		
5	F	Sept. 15	people & trees	whole tree lab	
6	T	Sept. 19	people & trees		
7	W	Sept. 20	urban trees		
8	F	Sept. 22	adaptation & acclimation	fruit tree lab	
	T	Sept. 26			QUIZ 1 L1-L8
9	W	Sept. 27	morphology & anatomy		
10	F	Sept. 29	morphology & anatomy	morphology	
	M	Oct. 2	NATIONAL DAY FOR TRUTH AND RECONCILIATION		
11	T	Oct. 3	morphology & anatomy	Essay choice deadline	
12	W	Oct. 4	morphology & anatomy		
13	F	Oct. 6	morphology & anatomy	no lab	
	M	Oct. 9	THANKSGIVING		
14	T	Oct. 10	morphology & anatomy		
15	W	Oct. 11	reproductive biology		
16	F	Oct. 13	reproductive biology	culturally imp	
	T	Oct. 17			QUIZ 2 L9-L14
17	W	Oct. 18	reproductive biology		
18	F	Oct. 20	reproductive biology	grafting (CLRS)	
19	T	Oct. 24	reproductive biology		
20	W	Oct. 25	leguminous trees		
21	F	Oct. 27	How to give a talk	wood anatomy	

Lecture Number	Day	Date	Title	Lab	Quizzes & Deadlines
	T	Oct. 31			QUIZ 3 – L15-20
22	W	Nov. 1	annual cycles		
23	F	Nov. 3	annual cycles	mycorrhizae	
24	T	Nov. 7	soils & nutrients		
25	W	Nov. 8	soils & nutrients		
26	F	Nov. 10	tree-insect interactions	no lab	
		Nov.13-15	READING BREAK		
	F	Nov. 17		no lab	QUIZ 4 L22-L25
27	T	Nov. 21	tree-insect interactions		
28	W	Nov. 22	drought		
	F	Nov. 24	Student presentations: start at 1:30		
29	T	Nov. 28	flooding		
	W	Nov. 29			QUIZ 5 L26-L39
	F	Dec. 1	Student presentations: start at 1:30		

Appendix

Territory Acknowledgment

The instructors of BIOL325 are grateful to live and work in the unceded territories of the Lekwungen speaking First Nations, and we support the University of Victoria's official territory acknowledgment:

“We acknowledge and respect the lək'wəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

Code of Conduct, and Commitment to Equity, Diversity and Inclusion (EDI)

All participants of BIOL325 are expected to treat each other with mutual respect. The course team welcomes students of all backgrounds, regardless of nationality, ethnicity, gender, sexual orientation, religion, age, etc.

Wellness, Safety, and Support

We encourage students to use the support services to address their needs, including Mental Health and Wellness (<https://www.uvic.ca/student-wellness/>), and Sexualized Violence Prevention and Education (<https://www.uvic.ca/sexualizedviolence/get-support/on-campus/index.php>).

Accessibility and Special Needs

Students with special needs will be welcomed and accommodated, provided those needs are registered through the Centre for Accessible Learning (<https://uvic.ca/services/cal>; phone: 250-472-4947)

Students must abide by academic regulations as set out in the university calendar. Please read the definitions and watch the tragi-comic video

<https://www.youtube.com/watch?v=VtOnjfMuBho>

Other information is available at the following link

<https://www.uvic.ca/current-students/home/academics/academic-integrity/index.php>

