

BIOL 449/ES 425 – Flowering Plant Diversity

Course Outline - Winter Term, 2025

Lectures: Monday; 2:30-5:20 p.m. - Cunningham 146

Labs: Thursday, B01 2:30-5:20 p.m. & B02 5:30-8:20 p.m.- Cunningham 245

INSTRUCTOR: Andy MacKinnon (andymackinnon@uvic.ca)

LAB INSTRUCTOR: Mr. Martin Liu (holy90@uvic.ca)

The University of Victoria stands on the unceded traditional Coast Salish Territories of the ɫəkʷəŋən peoples, including Songhees and Xwsepsum (Esquimalt) First Nations, as well as the shared territories of the WSÁNEĆ peoples (Saanich) including the Nations of BOKÉĆEN (Pauquachin), STÁ,UTW (Tsawout), WJOŁEŁP (Tsartlip), WSÍKEM (Tseycum) and Malahat. We acknowledge with respect the relationships between Indigenous people and the land from time immemorial to this day.

COURSE OBJECTIVES: To survey the range of variation in the flowering plants and explore how flowering plants have evolved and diversified over time.

COURSE FORMAT: Andy MacKinnon teaches Monday classes; Martin Liu is the Lab Instructor. The course includes some guest lectures. Powerpoint slides for each lecture will be made available on the Brightspace site. **Please be aware that these are outlines, not detailed notes** that are provided to help you organize and review the lecture material. It is important that you attend lectures and take notes. The midterms and final exam will be based on lecture material. See below for evaluation details.

The labs will introduce you to flowering plant diversity (variation in flowers and vegetative structures), the use of keys, and many plant families of this region. All labs are in person and begin the first week of the term (January 09, 2025). Please attend only the lab section in which you are registered. Each lab is full of content and will be busy, so expect that each lab will take the full three hours. Lab material and assignments will be posted at a minimum the day before the lab.

PROJECTS: In addition to regular labs, you will be assigned two field-based lab projects: **1)** A collection of 10 properly pressed and correctly identified plant specimens. **2)** An illustrated journal of flowering plant observations. More information will be available on Brightspace.

TEXTS:

Lecture: No text (references on reserve)

Lab: **C. L. Hitchcock and A. Cronquist. 2018. Flora of the Pacific Northwest, 2nd ed.** This is the newest updated edition with excellent geographic coverage and botanical keys for our area. Although the 1st edition (1973) has outdated nomenclature and lacks some species, it is also usable for the lab (**Required**). **J. G. Harris and M. W. Harris. 1994. Plant Identification Terminology, 2nd ed.** Plant descriptions are their own “language,” this guide will help you decipher and translate them. (**Required**).

EVALUATION: For success in this class, all lectures and labs should be attended. To pass this course, students must pass **both** lab and lecture components.

For success in this class, all lectures and labs should be attended. **Missing more than two labs and/or two lectures without written permission from the instructors will receive a failing grade.**

Lecture:	Two Midterm Exams (15% each)	30%
	Final Examination (cumulative)	20%
	Lecture Total	50%

Lab:

	Assessment	%	Details
Out-of-Lab	Plant Journal	8%	Due Lab 9 (Mar 13)
	Plant Collection	10%	Due Lab 11 (Mar 27)
In-Lab	In-Lab Assignments	9%	1% Each: Labs 1-5 and 7-10
	Quiz X4	8%	2% Each: Lab 2, 4, 8, and 10
	Lab Test	5%	Lab 6 (Feb 13)
	Final Lab Exam (Cumulative)	10%	Lab 12 (Apr 3)
	Lab Total	50%	

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%

There will be no supplemental exams. If you miss the midterm or lab test for a medical reason, the weight of the missed test/midterm will be redistributed and calculated based on the remaining tests or exams. Deferred final exams will only be considered if a formal Request for Academic Concession is provided to the course instructor or the lab instructor.

COURSE OUTLINE

Date	Instructors	Lecture topic
Jan 6	Andy MacKinnon	Class Introductions, Course overview, Introduction to the Angiosperms, Intro to local ecology of SVI. Angiosperm structure and variation Part 1
Jan 13	Andy MacKinnon & David Krug	Angiosperm structure and variation Part II, Inflorescences; vegetative structures (roots & stems); Vegetative structures (wood, leaves, hairs). Seed and seed-based restoration with grad student David Krug.
Jan 20	Andy MacKinnon, Geraldine Allen & Martin Liu	Plant reproductive biology; Plants and pollination adaptations. Intro to defining and describing species; Keys, ID, and herbaria. Fieldtrip to herbarium. Plant pressing with Martin. Meet in regular classroom (Cunn 146)
Jan 27	Andy MacKinnon & Matt Fairbarns	Midterm 1 2:30-3:20 Includes Lecture 1,2,3 (including David's lecture) GUEST: Matt Fairbarns -- Orobanchaceae and related families
Feb 3	Andy MacKinnon & Geraldine Allen	Origin and classification of angiosperms; the hierarchy of classification. GUEST: Dr. Geraldine Allen - phylogenetic methods; Molecular evidence in plant systematics; polyploidy
Feb 10	Andy MacKinnon	Basal lineages, Magnoliids, Monocots and Basal Eudicots
Feb 17	n/a	READING BREAK_NO CLASSES
Feb 24	Andy MacKinnon	Field Trip and lecture with Special Guest
March 3	Andy MacKinnon	Midterm 2 and Rosids
March 10	Andy MacKinnon	Asterids
March 17	Andy MacKinnon & Nancy Turner	GUEST: Dr. Nancy Turner – ethnobotany. Andy: Caryophyllales I, Caryophyllales II, plant chemistry
March 24	Martin Liu & Jennifer Penny (CDC)	Martin Liu: Plant Population and Conservation Genetics. Jennifer Penny, BC Conservation Data Centre: Botany Program, BC Conservation Data Centre.
March 31	n/a	EASTER_NO CLASSES
April 7	TBA	Field Trip – UVic

IMPORTANT DATES 2025

Term: Monday, January 6 – Monday, April 7, 2024

Family Day (stat): Monday, February 17 (no classes)

Spring term Reading Break: February 17-21 (no classes all week)

April final exam period: Tuesday, April 7 – Friday, April 25

Statement of Inclusion: The University of Victoria is committed to creating a learning experience that is as accessible as possible. If you are registered with the Centre for Accessible Learning (CAL) and anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with the instructor for the lecture and the lab instructor for the lab. If you are a student with a disability or chronic health condition you can meet with an advisor at CAL to discuss access and accommodations: <https://www.uvic.ca/services/cal/>

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, midterm 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 25, last day to drop without failure – Feb 28). 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:

Student Supports for Online Technology

Learn Anywhere:

<https://onlineacademiccommunity.uvic.ca/LearnAnywhere/>

New Student Mental Health Supports - In addition to providing both face to face and online mental health resources through our new 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/>

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/>

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: svpcordinator@uvic.ca

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/>

Centre for Accessible Learning - The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations.

<https://www.uvic.ca/services/cal/>.

Indigenous Academic & Community Engagement

[Indigenous Academic & Community Engagement - University of Victoria \(uvic.ca\)](https://www.uvic.ca/services/indigenous/academic-community-engagement/)

Elders' Voices - 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>
[uvic-indigenous-plan-2023.pdf](#)