

BIOL 449/ES 425 – Flowering Plant Diversity

Course Outline - Winter Term, 2023

Lectures: Tuesday, Wednesday, Friday; 9:30-10:20 p.m. - Cunningham 146

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

INSTRUCTORS: Dr. Andy MacKinnon (andymackinnon@uvic.ca)
Ms. Kristen Miskelly (kristenh@uvic.ca)

LAB INSTRUCTOR: Mr. John Kang (johnkang@uvic.ca)

COURSE COORDINATOR: Dr. Barbara Hawkins (bhawkins@uvic.ca)

The University of Victoria stands on the unceded traditional Coast Salish Territories of the ləkʷəŋən 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 and Kristen will alternate teaching sections of the course, with 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 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. The midterms and final exam will be based on lecture material. See below for evaluation details.

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 in the first lab, and 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 a newly updated edition, with excellent geographic coverage and botanical keys for our area. The 1st edition (1973), though it has outdated nomenclature and lacks some species, is also usable for the lab (required).

J. G. Harris and M. W. Harris. 1994. Plant Identification Terminology. Copies of other regional floras will be available for consultation (required).

EVALUATION:	Two midterm exams (15% each)	30%
	Final examination (cumulative)	20%
	Lecture Total (50%)	

Lab – iNaturalist Part 1	2%
Lab – iNaturalist Part 2	8%
Lab – Plant Journal	5%
Lab – Plant collection	15%
Lab – Two quizzes (5% each)	10%
Lab – Final lab exam (cumulative)	10%
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 for a medical reason, the evaluation breakdown will be adjusted accordingly. Deferred final exams will only be considered if a formal Request for Academic Concession is provided to Dr. Hawkins, the course coordinator.

COURSE OUTLINE

Date	Instructor	Lecture topic
Jan 10	Andy and Kristen	Introductions, Course overview, Introduction to the Angiosperms
Jan 11	Kristen	Angiosperm structure and variation I
Jan 13	Kristen	Angiosperm structure and variation II
Jan 17	Kristen	Inflorescences; vegetative structures (roots & stems)
Jan 18	Kristen	Vegetative structures (wood, leaves, hairs)
Jan 20	Andy	A history of angiosperm classification and nomenclature
Jan 24	Andy	The hierarchy of classification: phylogenetic methods
Jan 25	Andy	Defining and describing species
Jan 27	Andy	Keys, ID, and herbaria
Jan 31	Andy	Molecular evidence in plant systematics
Feb 1	Kristen	MIDTERM EXAM #1
Feb 3	Andy	Origin and classification of angiosperms; basal lineages
Feb 7	Andy	Magnoliids
Feb 8	Andy	Monocots I
Feb 10	Andy	Monocots II
Feb 14	GUEST: Jennifer Penny	Botany Program, BC Conservation Data Centre
Feb 15	Andy	Basal Eudicots; Rosids I
Feb 17	Andy	Rosids II
Feb 21-24		READING BREAK
Feb 28	Andy	Caryophyllales I, Caryophyllales II, plant chemistry
Mar 1	Nancy Turner	Ethnobotany
Mar 3	Dr. Barbara Hawkins	“10 Million Years a Minute”- a quick trot through plant evolution!
Mar 7	Dr. Peter Constabel	Secondary plant metabolites and chemical ecology
Mar 8	Kristen	Plant reproductive biology
Mar 10	Kristen	Plants and pollination adaptations
Mar 14	Andy	Asterids I
Mar 15	Andy	Asterids II
Mar 17	Andy	MIDTERM EXAM #2
Mar 21	Andy	Plants and Fungi
Mar 22	Andy	Polyploidy
Mar 24	Matt Fairbarns	GUEST: “Orobanchaceae and the disintegration of the Scrophulariaceae”
Mar 28	Andy	Plant biogeography I
Mar 29	Andy	Plant biogeography II
Mar 31	GUEST: Dr. Ken Marr	Royal BC Museum: Alpine plants of BC and their geographic pattern
Apr 4	Andy	Plant conservation biology
Apr 5	Andy and Kristen	Outside observations

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 Dr. Hawkins, the course co-ordinator. 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](tel:250.721.8021), Email: svpcoordinator@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 \(uvic.ca\)](http://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>