

Biology 4420 – Syllabus

Plant taxonomy is the study of plant diversity and diversification. The emphasis in this class will be on the diversity of the Intermountain Region, but context will be the [phylogeny](#) of the whole plant kingdom. Diversification, the processes leading to plant diversity will be discussed throughout the semester but will receive greater emphasis towards the end of the semester.

Objectives

By the end of this course students should be able to:

- Recognize, and explain to others how you do it, 50 plant families.
- Use technical identification keys, both dichotomous and multi-access, to identify plant taxa.
- Explain some of the processes leading to plant diversification
- Explain the basic principles guiding plant classification and nomenclature
- Prepare a museum quality herbarium specimen
- Use a research herbarium

Organization

The objectives of the course will be pursued through a combination of lectures, laboratory study, quizzes, assignments, completion of a key-writing project, quizzes, and tests.

We shall start by studying the earliest vascular plants but, once we reach angiosperms we shall skip around the phylogenetic tree in order to take advantage of any living plant material that is available through the greenhouse, local stores, or friends in warm places. At the end of each week, I shall provide a synopsis of what was covered at <http://herbarium.usu.edu/teaching/4420>. That is also the link of other course-related information.

Quizzes will be held at the start of lab on Wednesday. There will be a short midterm on Feb. 11 and a longer one on March 2. The key project will be explained in detail on Feb. 12.

Grading

Grades will be assigned on the basis of your scores on the four components of the course. These will be weighted as follows: Quizzes 10%; Project 20%; Midterm 1 10%; Midterm 2 25%; Final 35%. The quizzes, midterms, and final examination are comprehensive. The midterms and final will include a practical and written portion with each portion being given equal weight. The grades given will be at least as high as shown below. They may be modified, but in a way that will impact all people equally.

	93-100% A	89-92.9% A-
86-88.9% B+	83-85.9% B	79-82.9% B-
76-78.9% C+	73-75.9% C	69-72.9% C-
66-68.9% D+	63-65.9% D	
<63	F	

Lab fees

The lab fee contributes to the cost of the field trip, maintenance of the greenhouse, and purchase of fresh material.

Accommodation

Students are expected to attend all lab and lecture sessions except that the material of some lectures may be presented online instead of in class. There will be warning as to when this will occur. If, for some reason, you are unable to attend one of the class sessions, please let know. You are responsible for making up the material you miss.

Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435)797-2444 voice, (435)797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible.

Contact

The easiest way to contact me is via email. If I receive a request for clarification of some point, the reply will be sent to the whole class. If you wish to come and talk with me, emailing or phoning to ask if I am free is best. (email mary.barkworth@usu.edu; phone 435-797-1584).

Class Schedule

Date	Lab1	Lab2	Lect
Jan 11	Cancelled	What's it all about?	Overview of plant evolution
Jan 18	Human Rights Day	Lycopods and Monilophytes	Monilophytes; coping with changes
Jan 25	Monilophytes, native and greenhouse	Trees - ferns, cycads, conifers	Seeds and pollen grains
Feb 1	Conifers	Conifers and other gymnosperms	Campus tour
Feb 8	Angiosperms - flowers	Angiosperms - vegetative	MIDTERM
Feb 16	Phylogeny; family	2 families	Diversification & Selection, the basics
Feb 22	3 families	3 families	Phylogeny, the good, the bad, ...
Mar 1	3 families	Grasses	Grasses and grasslike plants
Mar 8	Sedges and rushes	3 Families	Learning families
Mar 22	3 families	MIDTERM	Project. Writing keys
Mar 29	3 families	3 families	Reproductive modes and taxonomy
Apr 5	3 families	3 families	Promoting pollination (of the right kind)
Apr 12	3 families	3 families	Causes of rarity and extinction
Apr 19	Mixed families from elsewhere	Project oral report	Field to herbarium. Written report due.
Apr 26	Red Butte Garden	Family review	Lecture review
May 3	Lab final at 5.30	Final Lecture 9.30	