

**SYSTEMATICS OF VASCULAR PLANTS SYLLABUS v0.1**  
**IB 168 & 168L, Spring 2019**

**Instructor:** Carl Rothfels

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**Office Hours:** In 3030 VLSB, TBD (or by appointment)

**Teaching Assistants:**

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**Text:** Simpson, M. G. 2010. *Plant Systematics*. Elsevier/Academic Press.

**Lecture times:** M/W 1:10 – 2 PM, 3030 Valley Life Sciences Building (VLSB) **[note location! Not 2070.]**

**Lab times:** Tu/Th 2:10 – 5 PM

**Course description and goals:**

To convey the fantastic amazingness of plants, and systematics, while provided a broad background in plant systematics. There are far too many plants to cover in a single course so our goals, instead, are to learn the major groups of plants, to understand their evolution, and to be familiar with the tools used to study systematics.

**Grading:**

Lecture and lab grades averaged (each 2.0 units). **Enrollment in both lecture and lab is required.**

**Lecture grade:**

(1) Two lecture exams (100 points each). The “final exam” is the exam slot. The full three hours will be available, but the exams should take less than 1.5 hours.

(2) Museum assignment – Each student will be responsible for mounting and curating a set of plant museum specimens (for 50 points) and a short document related to the specimens (also for 50 points).

(3) Field assignment – based on iNaturalist (100 points). A portion is due before spring break, and the remainder is due by 5pm on the last day of class.

**Lab grade:**

(1) Two lab practicals (100 points each)

(2) Sketch Book (100 points)

(3) Weekly lab quizzes (Ten minutes at beginning of lab; 10 points each; will count the ten highest scores and drop the others)

**Electronics Policy**

Please be respectful regarding electronics (phones, laptops, etc) while in the lab and lecture. Browsing non-course information, game playing, answering phone calls, texts, etc. may result the loss of your device until the end of the period. Note: it is increasingly well understood that taking hand-written notes improves comprehension and results in better grades than taking notes on a computer or studying from lecture powerpoint slides (e.g., [www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away](http://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away)). Your TA may decide to prohibit electronics in the lab.

**Sketch Book**

Lab requires hand sketches of material supplied for each lab. Much of the materials are fresh specimens and are therefore perishable. The lab period should be used to sketch and learn the characteristics of the different groups of plants discussed in this course. Sketching is superior to photographing to ensure you are learning the material. Sketches should be done on normal typing paper and placed in a 3-ring binder with dividers for major plant groups discussed in the course. Handouts should also be included in the sketchbook. See power point presentation “Your Sketch Book” for a full description.

**Use of Classroom for Study**

The classroom can be used for study when it is not being used by our course. To gain access to the room, discuss your schedule with the instructor or a TA. Regular scheduled times are preferred.

## Course Schedule (a work in progress)

Week	Lectures (1:M; 2:W)	Labs (1:Tu; 2:Th)
1: Jan 21 – 25	1) Holiday!	1) Lecture-in-lab. Introduction to the course, to each other, to the plant tree-of-life; quick plant overview (growth, photosynthesis, lifecycle, reproduction, endosymbiosis). I.e., introduction to plants.
	2) Principles of plant systematics; Taxonomy and systematics; Evolution. I.e., introduction to systematics.	2) Introduction to sketchbooks. Plant morphology, general (reproductive morphology, vegetative morphology).
2: Jan 28 – Feb 1	1) Plant systematics, continued. Classification, Scientific names, nomenclature, Linnaean hierarchy.	1) Quiz1. Phylogenetics lab
	2) Major lineages of nonvascular plants; uncertainty in the evolutionary tree. Guest appearance by Candidate Ekwealor.	2) Intro to field project. Trip outside to see hornworts, mosses, liverworts, and vascular plants.
3: Feb 4 – Feb 8	1) The origin of land plants (fossils fossils fossils). Guest appearance by Dr. Looy.	1) Quiz2. Fossil lab.
	2) Introduction to vascular plants. Lycophytes (guest appearance by Forrest)	2) Lycophytes, eusporangiate ferns.
4: Feb 11 – 15	1) Intro. to euphyllophytes. Intro. to monilophytes. Eusporangiate ferns.	1) Quiz3. Intro to museum project. Herbarium tour, keying lesson, and mounting session.
	2) Leptosporangiate ferns, with Candidate Mick.	2) Leptosporangiate ferns.
5: Feb 18 – 22	1) <b>Holiday!</b>	1) Quiz4. Cycads, ginkgo, gnetophytes.
	2) Non-conifer gymnosperms (ginkgo, cycads, Gnetales)	2) Field trip to the botanical garden.
6: Feb 25 – Mar 1	1) Conifers! Guest appearance by totally Dr. Dori Contreras.	1) Conifers.
	2) Introduction to angiosperms – review of gymnos; flowers, pollen, ovules, fertilization, endosperm, fruit.	2) Quiz5. Flowers & Fruit.
7: Mar 4 – Mar 8	1) Angiosperms: Amborella, Nymphales, etc. Magnoliids, Ceratophyllales.	1) Quiz6. Weirdo angiosperms (ANA grade, magnoliids).
	2) Intro to eudicots; Caryophyllales,	2) Ranunculales
8: Mar 11 – 15	1) Ranunculales With Keir	1) Quiz7. Caryophyllales
	2) <b>MIDTERM</b>	2) <b>Lab practical #1</b>
9: Mar 18 – 22	1) Midterm recap; midterm, finishing it.	1) Lab practical recap; grocery store field trip
	2) Rosids I (Fabaceae; nitrogen fixing symbioses)	2) Quiz8. Rosids I
Mar 25 – 29	<b>Spring break!</b>	
10: Apr 1 – 5	1) A Fine group of rosids; guest appearance by Dr. Fine himself	1) Quiz9. Rosids II
	2) Rosids II.2	2) Asterids I
11: Apr 8 – 12	1) Asterids I	1) Quiz10. Asterids II
	2) Asteraceae and The Tree Asters, with Isaac	2) Asterids III -Asteraceae?
12: Apr 15 – 19	1) Plant reproductive biology	1) Quiz11. Curation-fest (in the herbarium)
	2) Intro to monocots, Liliales, Bomarea; con Carrie!!	2) Petaloids I
13: Apr 22 – 26	1) Monocots I	1) Quiz12. Petaloids II
	2) Monocots II	2) Poales
14: Apr 29 – May 3	1) Monocots III	1) Botanical Garden, review
	2) Term paper share	2) <b>Lab practical #2</b>

Final: [not sure when this will be yet]. In the regular room.