

## *2019 Syllabus for Biology 313: Plant Taxonomy*

*Lecture: Tuesday/Thursday 8:00am–9:40am (251 ISC)*

*Lab: Wednesday 1:20-5:20pm (251 ISC)*

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Office Hours: Mon/Wed 10:30-11:00 & T/Th 10:30-12:00

The schedules and policies associated with this course may be subject to revision or change as a consequence of changing circumstances or events. Reasonable notification will be provided to students prior to any major changes in course policies or procedures.

### *Course Description*

Identification, nomenclature, and classification of vascular plants.

### *Course Goals*

The primary objective of this course is to provide a basis for your understanding of plant taxonomy, which includes the identification, classification, and relationships of vascular plants and plant families. You will learn how to observe, describe, and draw the features of plants that make them identifiable and increase your knowledge of regional plant species. This class is also a field class, which means that you will get to enjoy spending 24+ hours outdoors in various weather and ecosystems!

MY LEARNING OUTCOMES FOR YOU are being able to:

1. Describe how plant families are related and classified
2. Identify plants based on herbarium collections, dichotomous keys, and field guide books
3. Hone your observation and drawing skills
4. Maintain detailed and organized field notes
5. Compare regional ecosystems and cultural features
6. Communicate your scientific knowledge in meaningful and effective ways

YOUR PERSONAL LEARNING OUTCOMES are being able to:

### *Required Material*

- Murrell. *Vascular Plant Taxonomy*. 2010. 6<sup>th</sup> Edition. Kendall Hunt.
- Chadde. *Minnesota Flora: An Illustrated Guide to the Vascular Plants of Minnesota*. 2013.
- Johnson. *American Eden: David Hosack, Botany, and Medicine in the Garden of the Early Republic*. 2018.
- Dedicated plant collection notebook such as “Rite in the Rain” or Moleskin. I recommend one with numbered pages and blank or faint horizontal lines. Sketchbooks also work well.
- 10x Hand Lens available for purchase from Joy Navratil in the Biology Department Office

*Accommodations for Students with Disabilities*

In accordance with the Americans with Disabilities Act, Concordia College and your instructor are committed to making reasonable accommodations to assist individuals with documented disabilities to reach their academic potential. Such disabilities include, but are not limited to, learning or psychological disabilities, or impairments to health, hearing, sight, or mobility. If you believe you require accommodations for a disability that may impact your performance in this course, you must schedule an appointment with Disability Services to determine eligibility. Students are then responsible for giving instructors a letter from Disability Services indicating the type of accommodation to be provided; please note that accommodations will not be retroactive. The Disability Services office is in Old Main 109A, phone 218-299-3514; [cobbernet.cord.edu/directories/offices-services/counseling-center-and-disability-services/disability/](http://cobbernet.cord.edu/directories/offices-services/counseling-center-and-disability-services/disability/)

THE BEST WAY TO BE SUCCESSFUL IN THIS CLASS is to take lots of handwritten notes in a lecture notebook and your field notebook, as appropriate. If you need accommodations for other learning techniques, please let me know as soon as possible.

You may take photos of plants during fieldtrips, but *\*only\** after first making complete field notes and drawings in your field notebook. **Please be respectful and turn your cell phones off during lecture.**

*Respect for Diversity*

It is my intent that students from diverse backgrounds and perspectives be well-served by this course, and that the diversity that students bring to this class be viewed as a resource. Please let me know ways to improve the effectiveness of the course for you, personally, or for other students or student groups. As a student in this class, you are required to treat other members of the class with respect and kindness. Disrespectful, rude, or exclusive behavior will not be tolerated.

*Academic Integrity (from Student Handbook)*

“Students are responsible for maintaining and encouraging academic integrity at the college. We expect all students to act with integrity in the classroom and in completing and submitting assignments. Ultimately, students bear the responsibility of ensuring the integrity of their own work. Students are expected to meet at least the minimal requirements of each course with work of appropriate quality.

“At no time is cheating on examinations, quizzes, or assignments acceptable at Concordia. Students are also expected to exercise appropriate caution to avoid plagiarism on written assignments.”

I will not tolerate any instance of academic dishonesty, including cheating, plagiarism, falsification, facilitating others' violations, or impeding (see student handbook for definitions).

Instances of academic dishonesty will result in either a failing grade for that activity or for the course, according to the perceived intent and extent of the instance(s) of academic dishonesty. All academic integrity violations will be reported to the Office of Academic Affairs.

*Grades*

You must participate in 24 hours of fieldwork to get “field course” credit in this class.

|                  |                     |          |     |           | Percentage | Grade |
|------------------|---------------------|----------|-----|-----------|------------|-------|
|                  |                     |          |     |           | ≥ 93       | A     |
|                  |                     |          |     |           | 90-92.9    | A-    |
|                  |                     |          |     |           | 87-89.9    | B+    |
|                  |                     |          |     |           | 83-86.9    | B     |
|                  |                     |          |     |           | 80-82.9    | B-    |
|                  |                     |          |     |           | 77-79.9    | C+    |
|                  |                     |          |     |           | 73-76.9    | C     |
|                  |                     |          |     |           | 70-72.9    | C-    |
|                  |                     |          |     |           | 67-69.9    | D+    |
|                  |                     |          |     |           | 60-66.9    | D     |
|                  |                     |          |     |           | < 60       | F     |
| Category         | Item                | Date     | Pts | %         |            |       |
| Exams            |                     |          |     | 20        |            |       |
|                  | Terminology Exam    | Sept. 10 | 5   |           |            |       |
|                  | Exam 1              | Oct. 3   | 5   |           |            |       |
|                  | Exam 2              | Nov. 7   | 5   |           |            |       |
|                  | Final Exam          | TBD      | 5   |           |            |       |
| Lab Exams        |                     |          |     | 15        |            |       |
|                  | Lab Exam 1          | Sept. 24 | 5   |           |            |       |
|                  | Lab Exam 2          | Oct. 17  | 5   |           |            |       |
|                  | Lab Exam 3          | Nov. 26  | 5   |           |            |       |
| Plant Collection |                     |          |     | 30        |            |       |
| Notebook         | Initial 15 spp.     | Sept. 24 | 15  |           |            |       |
|                  | Second 10 spp.      | Oct. 17  | 10  |           |            |       |
|                  | Final 5 spp.        | Nov. 26  | 5   |           |            |       |
| Other            |                     |          |     | 35        |            |       |
|                  | Assignments         | Various  | 15  |           |            |       |
|                  | Family Presentation | Dec. 4   | 15  |           |            |       |
|                  | Participation       |          | 5   |           |            |       |
|                  |                     |          |     | Total 100 | 100%       |       |

EXAMS will test your understanding of plant taxonomy terminology, interrelatedness of plants and plant families, and cultural/economic properties of plants as covered in lectures.

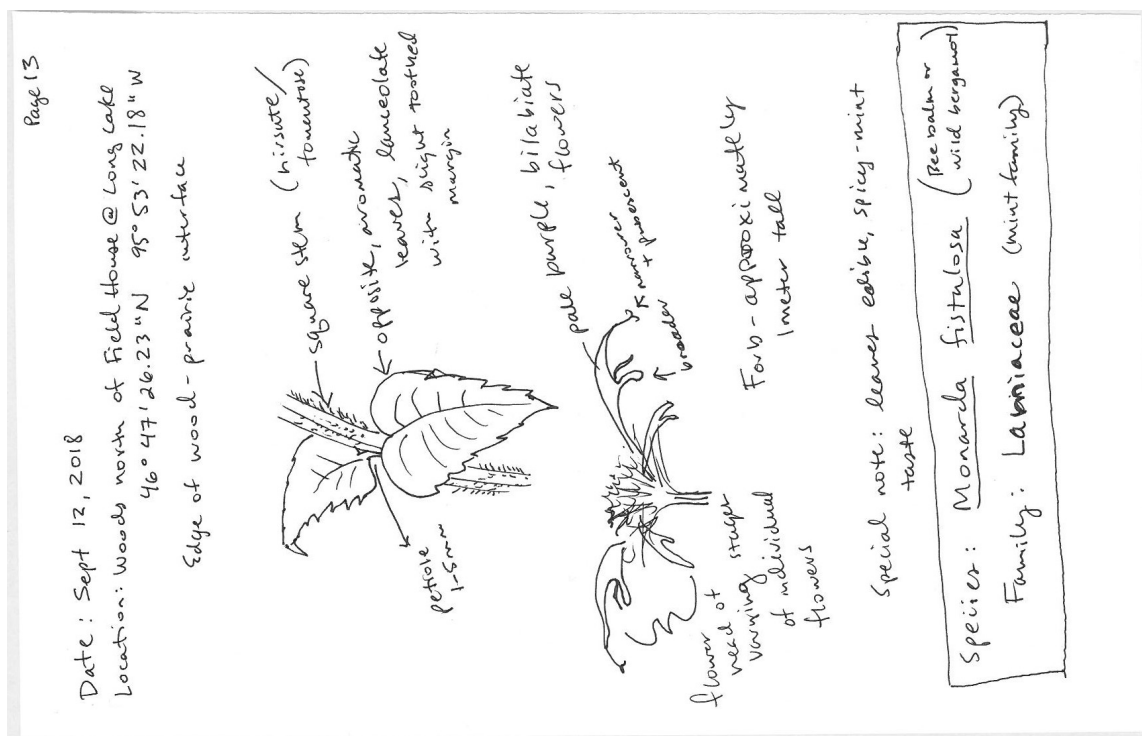
LAB EXAMS will test your ability to identify plant species and plant families. Scientific names will need to be used and spelled correctly for full credit. Spelling errors and common names will be counted for partial credit. Specimens used in lab exams will be a combination of live plants, dried plants, twigs, photographs, and/or fruit/seeds. Part of each lab exam will test your ability to use a key to identify an unknown plant.

THE PLANT COLLECTION will be a list of species provided in a table that will correspond with and be handed in with your field notebook. For full credit, you will need to have scientific name and family (1pt), completed field notes (1pt), technical descriptions (1pt), and drawings (1pt) for each individual species you “turn in” for review. Species records can span multiple notebook pages (e.g., early season leaf drawing, later season twig drawing), but separate entries for the same species do not count as multiple species.

You will need to turn in 15 individual species at Lab Exam 1, an additional 10 at Lab Exam 2, and an additional 5 at Lab Exam 3 (see schedule and grade breakdown for specific dates). The final 30 species should cover at least 10 families.

This is an example of the table and of a full-credit notebook page. Note: drawings do not have to be perfect, but they do need to reflect specifics that would help in identifying that particular species.

| Plant | Family    | <i>Genus species</i>     | Common name(s) | Type | Page(s) | Instructor Check |
|-------|-----------|--------------------------|----------------|------|---------|------------------|
| 1     | Lamiaceae | <i>Monarda fistulosa</i> | wild bergamot  | Forb | 13      | 9/25/2018: 4/4   |
| 2     | Ulmaceae  | <i>Ulmus americana</i>   | American elm   | Tree | 11,20   | 9/25/2018: 3/4   |
| ⋮     |           |                          |                |      |         |                  |



ASSIGNMENTS will include various low-stakes activities that will help you become a better scientist and citizen such as:

- Vocabulary worksheet
- In-class exercises
- Reflection papers (e.g., Symposium, Fugelstad lecture; each no more than 1 page)
- Sculpture collaboration project
- *American Eden* discussions and participation in Master Class

THE FAMILY PRESENTATION will be an oral presentation given in lab on December 5th. Specific guidelines, expectations, and a list of possible families to present on will be handed out at a later date.

PARTICIPATION in class and lab is essential. Participation is a small part of the final grade; however, a record throughout the semester of exemplary participation and attendance will also help in the case of a borderline final grade. Active participation also nurtures learning, and will improve the quality of future recommendation letters from your instructors.

### *Attendance Policy*

Regular attendance and participation in class is critical to your success at Concordia College. Because any absence, excused or unexcused, detracts from the learning experience, you are expected to attend all classes. I also value the educational experience afforded by student participation in co-curricular activities; however, you are responsible for notifying me of scheduled absences (e.g., co-curricular activities) at the beginning of the semester, or as soon as that information is available (but at least 24 hours in advance).

If absences become what I determine to be excessive (from 10-15% of classes, without valid college-recognized excuses), points will be deducted from your final percentage. In extreme cases (> 20% of

classes or 6 unexcused absences), I will assign a failing grade. **I strongly recommend that you are present and participate in the class.**

*Course Schedule (version dated 8/29/2019)*

- This class will be heavily front-loaded because of the waning fall plant season. Thus, we will focus the first month on observing and identifying as many species as possible.
- Also, this course counts as a “field course,” which means that you must be present in class for at least 24 hours of outdoor field labs (travel to and from field sites does not count). **It’s important to dress appropriately for the weather for all lab sessions.**
- Chapters listed are from Murrell *Vascular Plant Taxonomy*
- Lab Exams will be held during lecture times.

*Important Dates*

- **Tuesday, Sept 10** Terminology Exam
- **Thursday, Sept 12 through Saturday, Sept 14** Badlands Trip
- **Wednesday, Sept 18** Symposium; lab re-convened at Symposium
- **Tuesday, Sept 24** Lab Exam 1 & Plant Collection Check (first 15 spp.)
- **Thursday, Oct 3** Exam 1
- **Friday, Oct 4** Master class with Victoria Johnson
- **Thursday, Oct 17** Lab Exam 2 & Plant Collection Check (second 10 spp.)
- **Tuesday, Nov 20** Exam 2
- **Tuesday, Nov 26** Lab Exam 3 & Plant Collection Check (final 5 spp.)
- **Wednesday, Dec 4** Family presentations
- **Wednesday, Dec 11** Botany of food lab
- **Wednesday, Dec 18 2-4pm** Final Exam

*Topics and chapters*

- Terminology (Ch 3, 11)
- Using Keys (Ch 5)
- Grass & Aster special anatomy (p420-425, p492-496)
- Phylogeny; Scientific Names; Common Names (Ch 2, 4, 6)
- Monilophyta (Ch 9)
- Angiosperm Introduction (Ch 11)
- Basal Angiosperms (Ch 12)
- Monocots (Ch 15)
- Eudicots: Rosids (Ch 13)
- Eudicots: Asterids (Ch 14)
- Gymnosperms (Ch 10)
- Special Topic:

| MONDAY   | TUESDAY                                  | WEDNESDAY                            | THURSDAY                                      | FRIDAY  |
|--|--|--------------------------------------|---|---|
| Aug 26th   | 27th                                     | 28th                                 | 29th<br>First Day of Class<br>Emma C. Lecture | 30th  |
| Sep 2nd<br><i>American Eden</i><br>Ch 1-3  | 3rd                                      | 4th<br>Lab: Long Lake                | 5th<br>Terminology<br>worksheet due           | 6th   |
| 9th<br><i>American Eden</i><br>Ch 4-6  | 10th<br>Terminology<br>Exam              | 11th<br>Lab: Felton<br>Prairie       | 12th<br>Badlands                              | 13th<br>Badlands  |
| 16th<br><i>American Eden</i><br>Ch 7-9<br>Adopt campus<br>plant for art<br>collaboration | 17th                                     | 18th<br>Symposium                    | 19th  | 20th  |
| 23rd<br><i>American Eden</i><br>Ch 10-14   | 24th<br>Lab Exam 1 &<br>Plant Collection | 25th<br>Lab: Frenchman's<br>Bluff    | 26th  | 27th  |
| 30th<br><i>American Eden</i><br>Ch 15-17   | Oct 1st<br>Herbarium<br>activity         | 2nd<br>No lab                        | 3rd<br>EXAM 1                                 | 4th<br><i>American Eden</i><br>Master Class<br>Community Time |
| 7th<br>Draft plant<br>description due  | 8th                                      | 9th<br>Lab: Tamarac &<br>Hubble Pond | 10th  | 11th  |
| 14th   | 15th                                     | 16th<br>Lab: Amor &<br>Davies' WMA   | 17th<br>Lab Exam 2 &<br>Plant Collection      | 18th  |
| 21st<br><i>Fall Break</i>  | 22nd<br><i>Fall Break</i>                | 23rd<br><i>Fall Break</i>            | 24th<br><i>Fall Break</i>                     | 25th<br><i>Fall Break</i>                                     |
| 28th   | 29th                                     | 30th<br>Lab: Gallery<br>Opening      | 31st  | Nov 1st   |
| 4th  | 5th                                      | 6th<br>Lab: Campus<br>Gymnosperms    | 7th<br>EXAM 2                                 | 8th   |
| 11th   | 12th                                     | 13th<br>Lab: Winter twigs            | 14th  | 15th  |
| 18th   | 19th                                     | 20th<br>Lab: Greenhouse              | 21st  | 22nd  |

| MONDAY  | TUESDAY                                  | WEDNESDAY                           | THURSDAY                    | FRIDAY                      |
|---------|--|-------------------------------------|-----------------------------|-----------------------------|
| 25th    | 26th<br>Lab Exam 3 &<br>Plant Collection | 27th<br><i>Thanksgiving</i>         | 28th<br><i>Thanksgiving</i> | 29th<br><i>Thanksgiving</i> |
| Dec 2nd | 3rd                                      | 4th<br>Lab: Family<br>Presentations | 5th                         | 6th                         |
| 9th     | 10th                                     | 11th<br>Botany of Food              | 12th                        | 13th                        |
| 16th    | 17th                                     | 18th<br>FINAL EXAM<br>2-4pm         | 19th                        | 20th                        |