FIELD BOTANY, BIO 377
Spring 2019

Instructor: Dr. Carrie L. Woods
cwoods@pugetsound.edu; Thompson 223B; 253-879-3301
Office hours: T 11:30-12:30; W 11-12 pm or email for appointment
**I will likely only respond to emails between 9 am and 5 pm. You should expect
a response within a few hours but it could be up to a day or two.

Lecture & Lab: Th 12:30 pm – 4:30 pm (Harned 235)

Biology Liaison Librarian: Eli Gandour-Rood (egandourrood@pugetsound.edu)

Books & Supplies:
Required to purchase
Field journal (could be any notebook)
Write in the rain notebook

Provided for you and recommended if you want to continue identifying plants in the region
A hand lens of 10X or higher magnification (will be provided for you during the semester)
Publishing.
Washington Press.

Class Canvas site: https://pugetsound.instructure.com/courses/1778
Used for course information and handouts, including the syllabus and schedule, labs and extra
readings, and uploading many assignments.

Online Plant ID guides
Great for bryophytes: https://www.centralcoastbiodiversity.org/mosses-and-liverworts.html
UW Burke Museum Herbarium image collection:
Washington Native Plant Society website:
http://www.wnps.org/plant_lists/exploring_native_plants.html
iNaturalist is a great site as well. You can post an image and ask for an expert’s help.

Expected Outcomes
• To learn to identify plants in the region from all major plant groups
• To learn to use various identification tools
• To recognize characteristics of higher order classifications (e.g., families)
• To develop better observational skills through illustrations, field journals, and identifying
novel plants
• To understand the broad evolutionary trends among vascular plants
• To develop a fondness for botany
BACKGROUND
Plant identification is a very rewarding skill. Think about the plants you may know in your neighborhood, your backyard, or your local ecosystem; you likely know what they are because someone told you and you remembered. Plant identification can be quite easy when someone tells you what a plant is or you connect with the plant in some way (e.g., all Canadians know what a maple tree looks like). Learning the skills to identify plants so that you can do this anywhere in the world is the main goal of this class. So rather than just memorize hundreds of plants for this one class, we will focus more on developing the skills and language needed to identify plants anywhere: a keen eye, attention to detail, use of identification books and keys (and the terminology needed to understand them), and patience. Each week we will focus on learning the terminology for a different group of plants. We will take many field trips in order to practice our plant identification skills. I will be completely honest here in that I don’t know all of my plants in the Pacific Northwest. That doesn’t mean that I can’t learn them! So I will often not be able to just tell you what the plant is; this is actually more beneficial to you as we will have to figure out how to identify it together.

Plants are complex organisms with a whole set of terminology used to identify the tiniest of details. The first step is to identify the major group the plant belongs to, which can be done both phylogenetically (e.g., a fern or an angiosperm) and morphologically (e.g., a tree, a shrub, or an herb). We will use both in this class. I am a proponent of the method of plant identification proposed by Alwyn Gentry for tropical plant identification, whereby he focused on vegetative characteristics and using your senses first (feel, sight, smell, and sound). Most plant identification keys rely on tiny details, such as the number of anthers or carpels in a flower. The problem is that more often than not, you will come across a plant without all of the characteristics needed to follow an identification key. Gentry believed that if you can start with the family, you could get to the genus and eventually the species. We will take that approach in this class.

Field journal
In this course, you are expected to maintain a field journal. A field journal contains information about plants you learn including what they look like, what type of plant they are, their major classification, where you found it and when. What characteristics you used to identify the plant along with a drawing or sample of the plant are also often included in plant journals. These can become very personal as you often also jot down ideas as well as responses to and reflections about the natural world around you. I will be taking a look at these journals on Feb. 28 as a check in to make sure you are actually doing them. They will be due on Apr. 25 and returned to you.

Field trips
We will take many trips to the field in this course. We will start in the lab with a short introduction and then head out to the field. Some weeks will be spent almost entirely in lab, some will be half and half, and others will be spent entirely in the field. Pay attention to the weather on field trip days! We will go out regardless of the weather and I want you to stay warm and dry as much as possible. Dress appropriately, wear waterproof boots or shoes, and bring your Rite in the Rain notebook if rain is likely!
Exams and Quizzes
There will be 3 quizzes throughout the semester, a midterm and a cumulative final that will be on the last day of class (May 2nd). We will not have a final exam other than on our last day. The quizzes and exams can include identifying plant species, keying out species, or noting the characteristics of a species. They could also include synthesis questions about topics we cover in the field or lab. There will be take home portion for the midterm that will be more synthesis questions.

Specimen Preservation
*Botanical Illustration*
You will create a botanical illustration of any species of your choosing. You must have a photo and a herbarium specimen of the species you choose as well so it must be from our species list. You will learn how this is done in Lab 5.

*Herbarium Collection*
You will create a collection of 10 herbarium specimens from at least 2 of the major plant groups. These should have all of the correct information on the label and presented so that they could be donated to the Slater Museum collection.

Plants in the world summaries
Botany is all around us. You just have to have the right frame of mind to see it. Throughout the semester, I want you to write a summary of how botany is used all around you, either in your day to day lives, in the media, in your other classes, or in a seminar or talk. These should be about a page in length (double-spaced) and uploaded three times during the semester whenever you notice it.

Popular press article
You will write a 5 page (double-spaced) popular press article on something related to botany. Your audience is the general population so it should be accessible but still include interesting information. Think of something you would find in the NY Times or National Geographic. It could be about any topic such as how a plant is or was used by humans, when it is hypothesized to evolve, what makes it such a cool and interesting plant, or its ecological role, for example.

Course Policies
You are responsible for all material covered in mini-lectures, labs, and readings listed on the syllabus. During lab, you will be given information that is not on Canvas and so you must **attend labs and take detailed notes if you want to do well in the course**. As we only meet once a week, it is essential to attend class/lab each week. If you miss more than one lab, I will consider withdrawing you from the course. You are responsible for printing, reading, and either bringing the readings to class or critically evaluating them before coming to class. I would also suggest reading the material again after class to solidify the findings.
Pre-labs will not be accepted late. Anything turned in late will lose 10% per day including weekends to 30%. I cannot accept any written assignments after the start of our final exam. An act of academic dishonesty will result in a zero for the assignment linked to the offense and a loss of 100 points, assuming it is your first offense. If it is your second offense, you may receive an F for the course. Additional penalties may apply as the University requires that all acts of academic dishonesty are reported to the Dean of Students, who may opt to impose further sanctions. It is your responsibility to read and understand the UPS policies on Academic Integrity (http://www.pugetsound.edu/student-life/personal-safety/student-handbook/academic-handbook/academic-integrity/).

Classroom Emergency Response Guidance

Please review university emergency preparedness, response procedures and a training video posted at www.pugetsound.edu/emergency/. There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings.

If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative.

If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions.

Office of Accessibility and Accommodations

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Peggy Perno, Director of the Office of Accessibility and Accommodations, 105 Howarth, 253.879.3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Copyright and Fair Use

Course materials are subject to the copyright law of the United States (Title 17 U.S. Code). They are for educational purposes only and limited to students enrolled in the course. Further reproduction or distribution is prohibited.
<table>
<thead>
<tr>
<th>Item</th>
<th>Due</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quizzes and Exams</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td>Various dates (40 points each)</td>
<td>120</td>
</tr>
<tr>
<td>Mid-term</td>
<td>In class = Mar 14 (25 points)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Take home = Mar 28 (25 points)</td>
<td></td>
</tr>
<tr>
<td>Final lab exam</td>
<td>May 2</td>
<td>100</td>
</tr>
<tr>
<td><strong>Written Assignments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field journal</td>
<td>Check-in Feb 28 (5 points)</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Final turn-in Apr 25 (35 points)</td>
<td></td>
</tr>
<tr>
<td>Plants in the world summaries</td>
<td>Anytime (just not all in at end of semester; 5 pts ea.)</td>
<td>15</td>
</tr>
<tr>
<td>Popular Press Article</td>
<td>Idea: Apr 4 (5 points)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Final: May 2 (45 points)</td>
<td></td>
</tr>
<tr>
<td><strong>Specimen Preservation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbarium collection</td>
<td>Apr 25</td>
<td>70</td>
</tr>
<tr>
<td>Botanical Illustration</td>
<td>Mar 14</td>
<td>40</td>
</tr>
<tr>
<td><strong>Labs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>655</td>
</tr>
</tbody>
</table>