Washington University’s Danforth Campus is home to more than 4000 trees and is now a registered arboretum. This urban forest ecosystem has been carefully curated and managed to provide habitat diversity, shade, rainwater mitigation, as well as aesthetic beauty. In this course you will study the biology of woody plants in both the classroom and the arboretum. Specifically, you will learn woody plant systematics, physiology, and ecology as well as applied and hands-on techniques. You will learn to collect forestry data, and to identify trees by leaf, bud, bark, fruit and crown. You will learn to plant, propagate, and care for trees. You will also contribute to the ongoing research in our arboretum and to the education of your peers and campus visitors by adding new trees to the arboretum collection and by monitoring the campus trees as you collect data on growth and phenology.

Students who successfully complete this course will be eligible to join the Danforth Arboretum “Loraxes” for the remainder of their time at Washington University. Loraxes are arboretum ambassadors and will be called upon from time to time to lead tours of the arboretum for prospective students, for science outreach, or for members of the broader campus community.

Prerequisite: Biology 2960

Books and Equipment

- Trees of Missouri – Don Kurz (out of print, but available as pdf or used on Amazon)
- Forester’s Kit: Hand lens, DBH tape, calipers, arborists knife
- and Felco pruning shears

In addition, there are several other recommended (but not required) books that you may want to read in the library or buy for your study and your reference in years to come:

2. Fruit Key and Twig Key to Trees and Shrubs (1959) by Harlow. A handy, inexpensive guide to fruit and twig characters. Highly recommended!

Instructor contact information:

Stan Braude, braude@wustl.edu, office: McDonnell 306, phone: 935-7352, office hours Tuesday 8-10am
Graded Work

Daily Attendance, Quizzes, and Participation (30%): NB: Classroom participation includes, but is not limited to, your physical presence and punctuality. This requires that you avoid using cell phones and any laptop internet during class time. (If you’re looking at a screen, you’re not really present.)

Tree Identification Practical Midterm (30%): Students will be tested on the ability to accurately identify trees in the arboretum. We will visit many of them during class, but it is your responsibility to test yourself daily in order to be prepared for this exam.

Blitz Seminars (40%): Each student will present a seminar, reviewing for the class a recent, important, and interesting research article on the topic of the week. Three possible articles will be proposed (email a pdf of each article, along with the reasoning why each would be worth presenting) by Sept 30. Seminars will hopefully be presented outside, so you should bring handouts of any images you want the class to see. This may be a bit more challenging than a typical powerpoint presentation.

Extra Credit Opportunity (Up to 10%): Students have the opportunity to propose up to five campus trees to add to our arboretum’s documented collection. Written proposals must make a strong argument for why those particular trees merit inclusion. Reasons may include the prominence of a tree on campus, its aesthetic appeal, unique scientific value of the tree, prominence of the tree in native American tradition, or its value as a representative of a broader group of trees (eg Missouri natives, edibles, conifers, etc). The final decision for inclusion will be at the discretion of the campus grounds manager. These proposals are due no later than Nov 1.

There were twice as many students on the waitlist for this class as there are students enrolled right now. If you choose to stay, you must decide whether this class is right for you. This class is not a good fit for students who are more interested in their grade point average than they are in their development as a scientist. This class is not a good fit for students who need to sleep late because they stay up late. This class is for students who will read unassigned articles about the topics we cover. This class is for students who will spend far more time preparing their presentations than would be required for another class. This class is for students who will quiz themselves daily as they walk through the campus arboretum.
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<tr>
<th>Week of</th>
<th>Lecture</th>
<th>Seminar Signup</th>
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<td>Sept 14,16</td>
<td>Introduction to woody plants, Pre-Assessment</td>
<td>Intro to Arboretum, sign-up for seminar dates</td>
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<td>Sept 21,23</td>
<td>Woody Plant A&amp;P I (SB)</td>
<td>Language of Leaves</td>
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<td>Sept 28,30</td>
<td>Woody Plant A&amp;P II (SB)</td>
<td>Language of Leaves, Buds, and Flowers</td>
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<td>Oct 5,7</td>
<td>Woody Plant A&amp;P III (SB)</td>
<td>Language of Leaves, Buds, Flowers, Twigs, and Bark</td>
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<td>Oct 12,14</td>
<td>Woody Plant A&amp;P IV (SB)</td>
<td>Language of Leaves, Buds, Flowers, Twigs, Bark</td>
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<td>Oct 19,21</td>
<td>Right Tree, Rite Place and Pruning (Cody Azotea)</td>
<td>MIDTERM TREE ID</td>
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<td>Oct 26,28</td>
<td>Intro to Systematics (SB) and Keys</td>
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<td>Nov 2,4</td>
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<td>Nov 9,11</td>
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<td>Nov 16,18</td>
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<td>Forest Soil Ecology (Becknell)</td>
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<td>Forest Plots (Myers)</td>
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<td>Nov Dec 2</td>
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<td>Midwest Forests, MOFEP (Ladd)</td>
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<td>Dec 7,9</td>
<td>Seminars</td>
<td>Woody Plant Pathology (Penczykowski)</td>
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<tr>
<td>Dec 14,16</td>
<td>Seminars</td>
<td>Oaks &amp; Lepidoptera (Marquis will revise)</td>
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Student Expectations

Full Name: _______________________________________  Preferred Name: ________________  Pronouns_________

Best way to contact you (email address, phone etc): ____________________________________________________________

Permanent address to send work after the semester? ____________________________________________________________

____________________________________________________________________________________________________________

Relevant background:
Courses covering plant anatomy and physiology: ________________________________________________________________

____________________________________________________________________________________________________________

Courses covering evolution, systematics: __________________________________________________________________________

____________________________________________________________________________________________________________

Courses covering ecology, environmental biology: ________________________________________________________________

____________________________________________________________________________________________________________

Additional relevant experience: ____________________________________________________________

____________________________________________________________________________________________________________

What is the best course you have ever taken and what was so great about it?

____________________________________________________________________________________________________________

Why did you choose this course and what are you hoping to learn?

____________________________________________________________________________________________________________