ESM 324: Environmental Systems II Laboratory
Winter 2016

Where:
Sections:
Lecture Instructor:
Lab Instructor:
TA - Tues:
TA - Thurs:
TA - Fri:
Required Text: Brower et al., 1997, *Field and Laboratory Methods for General Ecology*
Optional Texts:
Jensen, 2010, *Trees to Know in Oregon* (EB1450)
Lecture co-requisite: ESM 321 is a required co-requisite.
Handouts: Syllabus, Rubric, Lab 1, Lab 2, Lab 3 (pdf files will be placed in D2L)
Style guide: Lab report style guidelines (pdf file will be placed in D2L)

Course schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab</th>
<th>Lab Topic</th>
<th>Location</th>
<th>Due</th>
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</thead>
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<tr>
<td>1</td>
<td>Jan 5,7,8</td>
<td>Introductions and Excel tutorial</td>
<td>Lab</td>
<td>Self-evaluation</td>
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<tr>
<td>2</td>
<td>Jan 12,14,15</td>
<td>1 Tree identification</td>
<td>Field (Marquam Woods MW)</td>
<td>Fieldbook</td>
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<tr>
<td>3</td>
<td>Jan 19,21,22</td>
<td>2 Vegetation field lab</td>
<td>Field (MW)</td>
<td>Fieldbook</td>
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<tr>
<td>4</td>
<td>Jan 26,28,29</td>
<td>2 Vegetation data analysis</td>
<td>Lab</td>
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<tr>
<td>5</td>
<td>Feb 2,4,5</td>
<td>3 Vegetation and soils sampling</td>
<td>Field (WM)</td>
<td>Lab 2 draft, Fieldbook</td>
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<tr>
<td>6</td>
<td>Feb 9,11,12</td>
<td>3 Sample preparation lab</td>
<td>Lab</td>
<td>Lab 2 peer review</td>
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<tr>
<td>7</td>
<td>Feb 16,18,19</td>
<td>3 Nutrient analysis (beginning)</td>
<td>Lab</td>
<td>Lab 2 report</td>
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<tr>
<td>8</td>
<td>Feb 23,25,26</td>
<td>3 Nutrient analysis (completion)</td>
<td>Lab</td>
<td>Fieldbook</td>
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<tr>
<td>9</td>
<td>Mar 1,3,4</td>
<td>3 Data analysis</td>
<td>Lab</td>
<td></td>
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<tr>
<td>10</td>
<td>Mar 8,10,11</td>
<td>3 Lab 3 peer review</td>
<td>Lab</td>
<td>Lab 3 draft</td>
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<tr>
<td>F</td>
<td>Mar 15,17,18</td>
<td>Lab 3 is due in drop box at 16:00</td>
<td>SRTC 218</td>
<td>Lab 3 report</td>
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</table>

*Grade distribution*: 4 fieldbook assessments (15% total – lowest score will be dropped); participation (10%); Lab 2 Peer Review (5%); Lab 2 Report (25%); Lab 3 Peer Review (10%); Lab 3 Report (35%).
Preparations: For field labs, bring appropriate outdoor gear, including day pack, water, fieldbook, hiking shoes/boots and raingear including impermeable gloves, hat, coat and pants. Note that we will go to the field as long as the university is open, regardless of rain or cold weather. We will walk several miles in occasionally steep terrain. You will be using the department’s equipment and are responsible for using it correctly, and returning equipment in working order after every lab. If you lose or break an item you will be charged for its replacement value. Arrive to lab on time - we will not wait for latecomers and you will not receive credit for the lab (participation/fieldbook).

Fieldbook: Each student will maintain a waterproof notebook for all lab sessions throughout the course. Whether field or laboratory based – you must bring your notebook to every lab. The pages must be numbered with dimensions of 4.5” x 7” or larger (ex. Rite in the Rain Nos. 351/361/371FX or 353N1). You may use one you already own – it will probably need 25-40 blank pages. Fieldbooks are scheduled to be evaluated 4 times during the course, with the lowest score being dropped (see schedule above). Please note that fieldbooks will only be accepted for credit on the day of the lab.

Waterproof fieldbooks are available for purchase from the Chemistry Dept. Stockroom at cost (SRTC 280), or many other sources (Powell’s, REI, and Amazon).

Purchase your fieldbook immediately; it is required for lab during week 2.

Participation: Attendance and active participation during lab sessions is required. Students comfortable with the material are expected to provide guidance to those students who need assistance. Students start and finish the lab together; points will be deducted for leaving the lab early without permission. Missing a lab will only be excused with prior permission and at the discretion of the instructors.

Late Assignments: Penalties for late assignments will be 5% credit lost per day. Assignments later than one week past the due date will not be accepted. Assignments must be turned in to the D2L drop box or the physical drop box outside of SRTC 218 (as specified by your TA) by 16:00 to receive a same day time stamp. Papers turned in after 16:00 will be time stamped as the following day. Labs turned in to the drop box must: 1) have the name of your Lab TA and 2) your name clearly printed on the document. Late papers missing this information are subject to further point deductions or a zero.

Lab reports: We will have one peer review session for Lab 2 and one peer review session for Lab 3: instructions on how to prepare and how to review a draft will be given verbally in class. Reports are turned in to your TA as hard copies or through D2L as specified by your TA and are due at the beginning of the lab the day they are due. Lab 2 reports are due in lab during week 5 and week 7 on your scheduled lab day. Lab 3 reports are due in the D2L drop box or the physical drop box (as specified by your TA; SRTC 218) on Friday March 18 at 4pm; no late papers will be accepted and no extensions will be granted.

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1 The use of any trade name does not imply an endorsement of the equipment, product or process named, nor any criticism of any similar products that are not mentioned.
**Resubmissions:** Lab 2 may be resubmitted, within one week of receiving it back, for up to half the points lost (not including any late points lost). Resubmissions must be turned in with the original lab report and changes to the resubmission must be highlighted.

**Class Policies:**

*Academic Support:* We are committed to your education. We are available during listed office hours and by appointment. Please see the lab TAs, the professor or your Support Tutor for help on course concepts, time management advice etc. We are here to help you, but it is your responsibility to take a proactive approach to your education such that you ask for help and utilize all the help that is available to you.

*Respect your professor, your TA and your peers:* Because of the large amount of material we will be covering and as a matter of convenience and courtesy, you must be on time to class. Please also turn off any portable communication, internet or noise making devices. If your cell phone or laptop becomes a distraction, you will be asked to turn it off and put it away. In and out of class you will be expected to interact with your professor, TAs and peers in a respectful manner. Failure to do so may result in your removal from this class.

*Academic Integrity:* No form of academic dishonesty will be tolerated. This course requires individual integrity and professionalism from all students. Should there be any suspicion of academic dishonesty, you will be notified immediately and asked to explain your actions. If academic dishonesty is proven, you will receive a grade of zero for the work; repeat offense is grounds for failure in the course. You are responsible for understanding the concept of plagiarism and for avoiding it at all times. If you have questions or concerns, the following site has examples of acceptable and unacceptable ways to cite: http://www.indiana.edu/~istd/

*Special Accommodations:* If you need accommodations, think you may need them as the quarter progresses, or have a medical concern (e.g. allergy to insect stings), that may affect you in the classroom or the field for any reason, please contact your Lab TA as soon as possible.

*Grading Questions and Contesting Grading:* You are responsible for keeping track of your grade in this class. You will be given a grade update in your lab section after the midpoint of the quarter. If you have questions about a grade you were given on any lab assignment, please see your Lab TA or instructor. Corrections can be made if the original assignment is presented with the correct grade BEFORE the last day of class. No grade challenges will be accepted after the last meeting day of the class.

*Resources:* As a PSU student, you have numerous resources at your disposal. Please take advantage of them while you are here. A small sample is listed below:

- Portland State University Resources
  - A complete list of services at http://my.pdx.edu/students/resources-across-campus
  - Career Center: http://www.pdx.edu/careers
  - Center for Student Health & Counseling: http://www.pdx.edu/shac/
  - The Writing Center: http://www.writingcenter.pdx.edu/
  - Disability Resource Center: http://www.drc.pdx.edu/ is available to help students with academic accommodations. If you are a student who has need for test-
taking, note-taking or other assistance, please visit the DRC and notify the instructor at the beginning of the term. They can be found in Smith Union Hall room 116, 1825 SW Broadway, (503)725-4150.

- Diversity & Multicultural Student Services (DMSS) http://www.pdx.edu/dmss/
  Provides structured, academic support service, advising, referrals, and advocacy for first-generation college students, low-income and others facing special challenges. Their offices are located at Smith Center, Room 425

- The Learning Center's http://www.pdx.edu/tutoring/home mission is to foster the learning process by empowering PSU students to accomplish their academic and personal goals. In addition to helping with current coursework, academic support services can assist in developing effective learning strategies. The Learning Center is located on the second floor of the University Library in the northwest corner, room 245.

Library and Literature Research: It is very tempting to think that all necessary resources or information will be available in full text after typing in a few words at Google.com. This is not the case. You will often need to go to the library, use real library search tools and access real books and articles contained in refereed/archival journals. Be sure to make use of the Vikat library catalog. Go to the PSU library home page at www.lib.pdx.edu/.

Campus Safety: The University considers student safety paramount. The Campus Public Safety Office is open 24 hours a day to assist with personal safety, crime prevention and security escort services. Call 503-725-4407 for more information. For Campus emergencies call 503-725-4404.

General Lab Rules:

- Goggles are required in working areas of the laboratory at all times. Other people’s work, as well as your own, can accidentally splatter and blind you. Please do not wear contact lenses, as the capillary action will hold chemicals against the eye and cause serious difficulty in washing your eyes. Goggles may be removed in designated ‘non-working’ areas of the lab – do not bring chemicals into these areas.

- If you get a chemical in your eye, you must wash it IMMEDIATELY. Familiarize yourself with the eye wash station and know how to use it before you need it - you may only have a few seconds before you are permanently blinded.

- In the event that a large amount of strong acid or base is spilled on you, get to a shower within 15 seconds. Where is the safety shower?

- There are fire extinguishers in the lab. Put out small fires with a towel, a book, or anything that will not easily catch fire.

- Shoes must completely cover the foot. You will not be allowed to work in the lab if you wear sandals or flip-flops even if you are wearing socks.

- Clothing must reach from the shoulders to the feet. No shorts or halter-tops.
• Any questions about lab safety should be directed to your instructor.

**Before you can work in the laboratory, you must read and understand the rules below:**

1. Do not work in the laboratory unless your instructor is present to supervise your work.
2. Do not carry out any unauthorized experiments.
3. Do not work in a manner that is unsafe to you or those around you.
4. Wear appropriate eye protection **AT ALL TIMES** in the working areas of the lab.
5. Contact lenses may not be worn in the lab.
6. Do not work with any chemical above or near your face.
7. Do not taste, smell, or ingest any chemical in the laboratory. For the same reason, you **cannot bring food or drink into the laboratory** (no chewing gum, tobacco, candy, coffee, etc.)
8. If you are directed to perform an odor test on a sample, use the motion of your hand to waft the vapor to your nose.
10. Never pipet directly from a reagent bottle.
11. Avoid skin contact with chemicals – Wear gloves.
12. Do not wear gloves outside of the laboratory.
13. Fume hoods must be used when toxic or corrosive vapors are released during the work you are performing.
14. Do not add water to a concentrated reagent, especially sulfuric acid and sodium hydroxide. Add the reagent to water.
15. All broken laboratory glassware must be placed in a special glass disposal box.
16. Bare feet, sandals, shorts, short skirts and short shirts are unsafe and must not be worn in the lab. For fire safety, loose clothes and ties should not be worn and long hair should be tied back.
17. Only neutral aqueous solutions can go down the drain. Waste determinations and disposal are performed by the instructor and staff – check with them before disposing of any chemical.
18. Wash your hands and wipe down your work bench with a wet sponge after completing your experiments.
19. Do not take any chemical out of the laboratory for any reason. It is illegal and you may be liable if another person is injured by anything you remove from the laboratory.

**In case of an accident:**

- If a chemical splashes into your eye, GET HELP IMMEDIATELY. Shout out ‘I have a chemical in my eye!’

- If someone near you gets a chemical in his/her eye YOU should: Shout for help from the instructor and provide help if the instructor is not immediately there.

- Wash eyes thoroughly with a stream of water from the wash fountain or closest sink if necessary. Hold the affected eyelid open.

- If any chemical comes in contact with you skin it should be washed off with a stream of water right away.

- Know the exit route from your lab in case of a large solvent spill, fire, or other emergency.

- Immediately report ANY accident to your instructor, no matter how minor it may seem.

- You are advised to have private health insurance. In the case of minor cuts or burns an instructor or staff member may escort you to the Student Health and Counseling Center. In serious cases 911 will be called.