



FOR441: SILVICULTURE PRINCIPLES

Lectures: 12:00-1:00 MWF,
Labs Monday afternoon, 2:00-4:50
Spring 2010

INSTRUCTOR: Dr. Klaus J. Puettmann
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OFFICE: 301L Richardson Hall
OFFICE HOURS: 3:00 to 4:00 TU and WD, or anytime by appointment

DESCRIPTION: Silviculture melds the biological and operational dimensions of forestry, and can be defined as: *the art and science of manipulating growing space for trees and stands to meet an objective*. We will first examine natural tree and stand development with some fundamentals of stand dynamics, site productivity, stand density, and tree growth/architecture. The main part of the course addresses basic tools and techniques used by silviculturists – the silvicultural “toolbox”. We will, of course, integrate the fundamentals and tools by examining standard prescriptions that achieve various management objectives.

TEACHING ASSISTANT: Emily Comfort (PhD. student)
EMAIL: through Blackboard[®]
OFFICE:
OFFICE HOURS:

UNIT OBJECTIVES:

By the end of this unit, you should be able to:

- Understand the basic terminology and concepts of silviculture;
- Translate and use the forest vegetation formula to solve management problems:
$$FV = f(CL/M, S, H, F, MM, SSW)*P*T;$$
- Numerically manipulate measures of stand density, growth, and productivity;
- Graphically interpret growing space, stand age, density, site index, and growth;
- Explain the natural development of stands under different conditions;
- Integrate the myriad of tools and techniques available to silviculturists, their relative strengths and weaknesses, and correct applications;
- Predict the effects of various silvicultural treatments on stand development; and
- Relate general silvicultural concepts to specific management objectives.

UNIT STRUCTURE/APPROACH

The ‘silviculture’ unit consists of 28 discussion and lecture periods complemented by eight labs (four in the field, rain or rain). The discussions and lectures will attempt to **structure** the information for you, **answer** your questions, **fill in** gaps that I perceive in the readings, **emphasize** key concepts (on which you will be tested), and **give lots of examples** from various parts of the world. I will give you

questions or problems to work on in or after class, some of which will be incorporated into your grade (e.g., the **Week-In-Review Exercises**).

Labs (indoor and outdoor) are designed to **review** lecture concepts, **practice** skills, and **apply** them to real forest/management situations. Parts of some labs may just be ‘show-and-tell’ to provide you with visual/mental images that support lecture material and discussions.

Class participation is encouraged and welcome in the classroom and field. Students may be asked to lead discussion on specific topics. This will allow the whole class to benefit from the range of backgrounds and interests in the class.

In case you miss class, I am using following policy “It is important that students take responsibility for making up their own work. Please support your child’s development of personal responsibility according to the guidelines below. When a student is absent from school, he or she is responsible to check *Blackboard* and with their homework buddies regarding missed work. Make-up work should be completed in a timely fashion.” Adapted from Linus Pauling Middle School, Corvallis.

WARNING: I do not read the “textbook” and other material to you, so you will be required to do a modest amount of out-of-class reading and homework problems to prepare for class – I expect students to be prepared to ask and answer questions each and every time we meet, and we will do in-class exercises to monitor this. I recommend glancing through each chapter, as assigned in the syllabus, and then read the section specific to a lecture/discussion before class. I will provide guidance at the end of each class about readings for the next class.

PREREQUISITES:

Prerequisites include FOR240 and FOR 141 or FOR 241. Many discussions and lectures will assume a basic knowledge of on topics covered in these classes and some questions from these classes may be on the tests. You may want to refresh your memory just in case. Keep Forest Ecology books handy, if you have them.

EXAMINATIONS:

Two midterm exams and one final exam consist of questions based on lectures exercises, field trips, discussion sessions, and assigned readings. Exams will be closed book and cover the material since the last exam. However, silviculture builds on basic principles that should not be forgotten as the course progresses. Students might encounter questions that require them to recall material from earlier course segments. Questions will have the intent to make students reason and demonstrate their understanding, rather than regurgitate facts. Some of the questions include presentations of a situation (i.e., case studies) that call for a concise, complete answer. Terminology is important – it is a lot easier to make a convincing case that you understand the topics, if you use terminology! Make-up exams are only allowed in extenuating circumstances and if the instructor is informed before the regular exam time.

Grading will be on a curve and will reflect OSU’s definitions of grades (<http://catalog.oregonstate.edu/ChapterDetail.aspx?key=9>). If students disagree with the grading of a question or an assignment, they need to provide a brief written statement on why they think their answer is correct and/or deserves more credit. Referencing reading material or class notes to back up any arguments is helpful. This will force students to rethink the question; they cannot help but learn from the experience. Keep in mind that I don’t have any control over grades; you are the sole determinant of your success. All I do is apply OSU’s criteria to your performance.

TEXTBOOK AND READING MATERIALS:

Textbook: Tappeiner, J.C., D.A. Maguire, and T.B. Harrington. 2007. *Silviculture and Ecology of Western U.S. Forests*. This is a 'must-have' textbook. I recommend you purchase the book, but a copy is also provided for you at the Self-Learning Center.

Supplemental Readings (sp)

Blackboard (electronically) and/or the College's Self-Learning Center:
<http://wwwdata.forestry.oregonstate.edu/forestry/pubs/fmc/slc/courses/course.php?num=FOR441>

**EVALUATIONS
AND DEADLINES:**

Your grade will be based on WIREs, lab write-ups, and exams.

GRADING SYSTEM: Week-In-Review Exercises (8@10 points each)	80
Lab write-ups (6@25 each)	150
Exams (3@100)	<u>300</u>
TOTAL POINTS FOR BASIC UNIT:	530

UNIT POLICIES (see policies Oregon State University on the web):

DEADLINES: Emergencies are inevitable. Only in such special circumstances (e.g., illness) and if the instructor or TA has been notified in advance will late assignments be accepted without penalties. In all other cases, assignments handed in late will be penalized by 5 and 10 points per day for WIRE and Lab write-ups, respectively. For exams, I may reschedule the exam or set up an **oral** examination on the material, but again, **ONLY IF** you notify me before the class time.

PROFESSIONALISM AND HONESTY: You will be expected to conduct yourself in a professional manner. Academic dishonesty such as plagiarism and cheating will not be tolerated. Therefore, students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

- * cheating- use or attempted use of unauthorized materials, information or study aids,
- * fabrication- falsification or invention of any information,
- * assisting- helping another commit an act of academic dishonesty,
- * tampering- altering or interfering with evaluation instruments and documents, or
- * plagiarism- representing the words or ideas of another person as one's own.

For more information about academic integrity and the University's policies and procedures in this area, please refer to the Student Conduct web site at:
<http://www.orst.edu/admin/stucon/achon.htm> and the section on Academic Regulations in the OSU Schedule of Classes.

The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. OSU rules are formulated to guarantee each student's freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or

intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office. For more information, please refer to the OSU web site at <http://osu.orst.edu/mission/>.

DISABILITIES: Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know, or who need special arrangements in the event of an evacuation, should make an appointment with the instructor as early as possible, but no later than the first week of the term. In order to arrange alternative testing, the student should make the request at least one week in advance of the test. Students seeking accommodations should be registered with the Office of Services for Students with Disabilities.

CALENDER: see separate file