NR 11-Silviculture

Reedley College- Fall 2009 CR#50038

Lecture Tues. and Thurs. 8:00 am to 9:50 am.

Lab Mon. and Wed. 2:00 pm to 4:50 pm.

**Instructor:** Ian Stone

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Office Hours: Tues. 11:00 am to 12:00 noon and 3:00 to 4:00 pm, Thurs. 1:00 to 2:00 pm.

 Other time by appointment

**Course Outcomes:**

Upon completion of this course students will be able to:

1. Differentiate between various harvest types, silvicultural prescriptions, and operations carried out to implement silvicultral components of forest management plans .
2. Understand the variety of silvicultural systems (e.g. shelterwood, clearcuts, selection systems, and variations) used in the practice of forestry
3. Perform timber marking in a forest stand according to a silvicultural prescription and management plan.
4. Generate a marking guide and stand table using the Guilden BDq quadratic method and an associated management plan.
5. Assess silvicultural prescriptions in the context of public and private forestlands.
6. Understand the principle of regeneration of forest stands and compare and contrast natural and artificial regeneration practices.

**Course Objectives:**

1. Demonstrate data collection and analytical principles used in the practice of silviculture.
2. Understand the silvicultural terminology used by forestry professionals.
3. Discuss basic principles of forest ecology and their relation to silviculture.
4. Understand even aged and uneven aged silvicultural systems and the advantages and disadvantages of both.
5. Determine number of trees and overall volume to remove from a stand by diameter, crown class, form, and other key characteristics during a harvest.
6. Develop proficiency in measurements and field tasks (e. g. timber marking) used in the practice of silviculture.
7. Perform measurements and data collection (ex. stocking surveys, regeneration assessments, etc.) associated with the practice of silviculture.
8. Determine the appropriate planting procedure during artificial regeneration based on site productivity, site characteristics, and seed zones.

**Attendance and Drop Policy:**

Class attendance is essential for students to be successful in any course, and this is especially true for compressed schedule courses. One missed class period in this course is equivalent to two or three missed class periods in a standard course. Therefore, it is essential that students attend all lectures and labs and labs; however, students are not graded on attendance. Due to the limited number of seats in the class, and the high demand, students who miss the first class meeting will be promptly dropped. Students must stay in class for the entire period to be counted as present. Students absent from three or more class meetings (lecture or lab) without a recognized excuse will be dropped from the course.

It is a student’s responsibility to drop the course if they no longer wish to be enrolled in the course. Failure to do so could result in a student receiving a failing grade in the course or being dropped by the instructor for failure to attend.

The following dates are important to be aware of

10/25 last day to add

1026 last day to drop without a drop grade

11/15 last day to drop with a drop grade

**Absence Policy**

The only excused absences that will be recognized are personal illness, medical emergency, family emergencies, a death in the immediate family (parent, sibling, grandparent), and professional development (i.e. professional meetings, job interviews). For these excuses to be recognized students must provide appropriate documentation. Personal illness and medical emergencies requires verification by a physician (doctor’s excuse) or the college nurse. Medical issues are private, and if a student wishes he or she can provide documentation of the illness to the college nurse and have the nurse send verification to the instructor to assure medical issues remain private. For family emergency, students should provide some documentation from their immediate family detailing the emergency and why the student should be excused. For a death in the immediate family students should provide the instructor with a copy of the obituary. For professional development students must provide documentation that they attended the event (for example a letter from an advisor, e-mail confirming the job interview, etc.). Recognition of the excuse is the decision of the instructor and will be based on the documentation provided. Failure to provide appropriate documentation will result in the absence being considered unexcused.

In the event that a student will be absent for an extended period of time (more than one class meeting) due to illness or similar issues must notify the instructor immediately. An extended absence in compressed schedule courses can severely impact a student’s performance in the course. Students who will have an extended absence should seek guidance from the instructor as to whether they should continue in the course or drop.

**Classroom Policies and Essential Information**

Academic Honesty

Cheating and plagiarism are serious offences and will not be tolerated. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

**Cheating** is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another’s work, supplying one’s work to another, giving or receiving copies of examinations without an instructor’s permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

**Plagiarism** is a specific form of cheating: the use of another’s words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights.

Any student found to have violated academic honesty standards on an assignment, quiz, or exam will **receive immediate sanctions.** Sanction can include a failing grade in the assignment or course at the discretion of the instructor. Student violating academic honesty standard may also be turned over to the Vice President of Student Services for further sanctions.

Classroom Conduct

The objective of this course is for students to learn, and accomplishing this requires a structured environment. Students must remain respectful of their fellow students and the instructor at all times. Disruptive behavior of any sort will not be tolerated. Students engaging in disruptive behavior such as loud outbursts, obscene gestures or language, harassment or belittlement of fellow students or the instructor, or any other offensive and disruptive conduct will be told to stop the behavior immediately. If a student persists with the behavior they will be ejected from the class and reported to the Vice President of Student Services.

Students are not to use tobacco products (smoking or smokeless) during class or in the vans while traveling to and from labs. Students using tobacco products during class or in the vans will be told to put the product away and case using it. If students continue to violate this policy they may be ejected from class. Students are not to bring any food items into class during lecture. When working with laptops or in computer labs students are not to consume food or drink to prevent damage to the computers. During field trips students are expected to clean up after themselves in the van and remove all drink and food containers/wrappers from the van.

Students should take care to arrive to class on time. It is distracting and disruptive to other students to arrive late and interrupt the class. Students arriving more than 15 minutes late should wait until a class break before entering the room. If a student is habitually late for class they will be required to meet with the instructor concerning their tardiness. For field trips students must be on time. The bus will not wait for students who are late. Failure to arrive on time may result in the student missing the field lab, and the student will be considered absent.

Electronic Devices

All electronic devices such as cell phones, I Pods, etc. must be turned off during class. Students may use laptops during class to take notes, but the sound must be muted to prevent disturbing class. The use of any electronic devices other than a non-graphing calculator during quizzes or exams is not permitted. Students violating these policies will receive a reminder to turn off devices or silence their laptops.

Academic Accommodation

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Text Book and References:**

Required Text: Nyland, R.D. Silviculture: Concepts and Applications, 2nd Ed. Waveland Press, Long Grove, IL.

References and Resources:

 USDA Forest Service Silvics of North America Volume 1 (Conifers) and Volume 2 (Hardwoods). Available free online at <http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm>

USDA Forest Service Fire Effects Database. Trees Index. Available free online at <http://www.fs.fed.us/database/feis/plants/tree/index.html>

Dictionary of Forestry, Society of American Foresters. Available online at safnet.org

**Required Materials**

Students must have all required safety equipment when working with on field trips and durring field exercises. The standard of 8” boots, gloves, pants, long sleeves, and a hard hat will be enforced. Students must furnish these items for their own use, they will not be provided.

 A scientific calculator such as a TI 30 series or similar can be extremely valuable when performing calculations required in the course and on exams.

**Grading Policy:**

Grades in this course will are based on a 10 point grading scale.

90-100% A

80-89% B

70-79% C

60-69% D

< 59% F

Final grades will be based on lab assignments, quizzes, exams, and a combined term paper and presentation. The weight of each grading component is as follows.

|  |  |  |
| --- | --- | --- |
| Item  | Total Points  | Percent of Final Grade |
| Exam 1 | 150 | 15% |
| Exam 2 | 150 | 15% |
| Final Exam  | 250 | 25% |
| Term Paper  | 100 | 10% |
| Presentation for Term Paper | 50 | 5% |
| Lab Assignments  | 200 | 20% |
| Weekly Quiz  | 100 | 10% |
| Total  | 1,000 | 100% |

Mid-term Exams:

Exams will cover material from both the lecture and lab. Exams are cumulative and will cover materials from previous exams as well as material presented after the previous exam. No makeup examinations will be given. Students will have the option to replace their lowest exam grade with the grade from their final exam, provided they score higher on the final exam. In the event that a student misses an exam, this will count as the lowest score and the final exam score will take the place of the missed exam. Student with a valid excuse who notifies the instructor of this excuse one week prior to the exam will have the option of taking the exam early. This courtesy does not extend to unexcused absences.

Final Exam

Attendance for the final exam is mandatory. If a student will be absent for the exam they may reschedule the exam time with prior notice (a minimum of 1 business day). Students failing to take the final exam will receive an automatic 0. The final exam is cumulative and will cover any and all topics presented in lectures and labs.

Term Paper and Presentation

Students are required to produce one term paper, which will be delivered at the end of the semester. The topic of this paper will be the siviculture associated with a major timber species from one of the four forest regions of the United States (Southeast, Northeast, Lake States, and Western). This report will include a description of the species’ silvics and management requirements along with a written silvicultural plan for a standard rotation of timber. This report must include a minimum of 5 references, 3 of which must be books, scientific journals, or government publications. Bonus points will be allowed for students exceeding the minimum reference requirement. Students will be graded on content, accuracy of information, writing skill, and grammar.

Students must also prepare an oral presentation on the same project and present it in front of the class. These presentations will occur during the last two labs. Presentations will be 8 minutes with 10 minutes for questions. Presentations must include audio visual content in the form of PowerPoint. Students will be graded on content and accuracy of information as well as the presentation style, preparation, and professionalism.

Lab Assignments:

Students will be required to turn in an assignment for each laboratory. Assignments will vary from work sheets to written reports. Assignments are due at the start of the next lab. Due to the nature of forestry field labs it is impossible to reproduce the field lab. In these cases students will be given a suitable make-up assignment. Students who do not provide documentation of an excused absence (see absence policy) will not be allowed to undertake a makeup assignment.

Quizzes

Students will be given a weekly. These quizzes will consist of silvicultural terms. Students will be given a list of terms they are responsible for each week. Definitions can be found in the Dictionary of Forestry on the SAF website (safnet.org). Students will not be allowed to makeup a quiz without an excused absence.

**Tentative Class Schedule**

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| --- | --- |
| Lecture | Lab |
| Date  | Subject  | Date  | Subject  |
| 10/18 | Introduction To Silviculture  | 10/17 | Introduction  |
| 10/20 | Basic Ecology, Competition, Succession | 10/19 | Vegetation Classification, Stand Delineation-Reedley Farm  |
| 10/25 | Silvicultural Systems Tree Physiology  | 10/24 | Sequoia Lake Field Trip-Ecology and Tree Physiology  |
| 10/27 | Stand Structure, Crown Class, Tree to Tree Interactions  | 10/26 | Visual Forester 1-3 |
| 11/1 | Site Class, Productivity, Stand Development | 10/31 | Visual Forester 4-6 |
| 11/3 | Exam 1 | 11/2 | Seed Zones  |
| 11/8 | Regeneration  | 11/7 | Stand Development-Sequoia Lake, Hume Lake Ranger District |
| 11/10 | Regeneration Cont. Silvicultural Treatments  | 11/9 | Compare and contrast Even Aged vs. Unevenaged Management-Visual Forester |
| 11/15 | Forest Practices Act  | 11/14 | Site Index Curves, MAI, CAI, PAI |
| 11/17 | Principles of Thinning  | 11/16 | BDq, Unevenaged Management |
| 11/22 | Exam 2 | 11/21 | Thinning and Growth Curves  |
| 11/24 | Thanksgiving Holiday, No Class  | 11/23 | Timber Marking Exercise  |
| 11/29 | Applications and Methods of Thinning | 11/28 | Prescription Examination and Critique-Private Land, Sequoia Lake  |
| 12/1 | Managing for Objectives  | 11/30 | Prescription Examination and Critique- Public Lands Sierra National Forest  |
| 12/6 | Release Operations, Salvage, Control of Damaging Agents  | 12/5 | Student Presentations  |
| 12/8 | Review for Final, Term Paper Due | 12/7 | Student Presentations  |
| 12/12-12/16  | Final Exams Week  | 12/12-12/16  | Finals, No Lab  |