**Reedley College – Agriculture and Natural Resources Department**

**Course Syllabus**

NR 20 – Forest Measurements

Spring 2020 - CR#56444

Lecture - Tuesday 9:00 am to 10:50 am, FEM 12

Lab - Tuesday 1:00 pm to 3:50 am, FEM 12

**Instructor:** Joshua Soderlund                                                                                                **Units:**3

Office: FEM 4G, Phone (559) 494-0300, Ext. 3260

Email: joshua.soderlund@reedleycollege.edu

Virtual Office Hours: M--1:15pm-2:15pm; W--12:30pm-2:00pm; TH--9:00am-11:00am; F--12:30pm-1:00pm; Other times by appointment or *if my office door is open then I am available to talk.*

(ZoomConference links will be emailed out weekly)

**VIRUS WARNING- BECAUSE OF SERIOUS RISK OF COVID 19 VIRUS TRANSMISSION ALL PERSONS ARE EXPECTED TO ABIDE BY SAFETY PROTOCOLS AT ALL TIMES THROUGHOUT THE SEMESTER**

**DO NOT ATTEND ON-CAMPUS CLASSES IF YOU ARE ILL, IF YOU HAVE SYMPTOMS OF INFECTION OR HAVE BEEN IN CONTACT WITH ANYONE BELIEVED TO BE INFECTED WITH COVID 19.**

You are **required to wear a cloth face covering** over your mouth and nose while in face-to-face portions of this class and while inside of school buildings, near the entry doors and when outside but near other people.  You are required to wear facial coverings during laboratory exercises whenever other people are present in your area.

You are required to take action to sterilize equipment or other items that you handle before leaving an area and before allowing other people to touch those items.

**Course Advisories:**Mathematics 45 or 4A, English A1

**Holidays:** Spring Recess- 3/29/21-4/2/21

**Drop Deadlines: January 22th,**last day to drop to qualify for a refund.  **January 29st,**last day to drop to avoid “W”.  **March 12th,**after this date letter grade assigned.

**Final Exam: Tuesday, May 18st 9:00am-10:50am**

**Textbooks:**

Avery, T.E., H.E. Burkhart and Bullock, B.P. 2019. Forest measurements. 6th ed. Waveland Press, Inc. **(Recommended)**

Bell, J.F., and J.R. Dilworth. 2007. Log scaling & timber cruising. John Bell & Assoc. **(Recommended)**

**Required Materials:**

Students will need the following materials to perform tasks in class-

* A scientific calculator such as a TI 30 series or similar
* A ruler

**Course Outcomes:**

1. Scale logs for the board foot volume.
2. Demonstrate the use of forest measurement tools which may include: scaling sticks, Relaskops, Biltmore/cruiser stick, clinometer, diameter tape, and laser rangefinders.
3. Assess forest inventory by various sampling designs (e.g., strip cruise, 3P sampling, systematic, or stratified sampling designs, etc.) and gather information regarding tree species, height, and diameter to predict stand or forest volume.

**Course Objectives:**

1. Assess the damage to wood volumes from insect, fire, suppressed conditions, and human factors, and estimate the financial loss.
2. Cruise standing timber and determine the quantity and quality of wood.
3. Discuss the objectives and goals of a forest inventory project.
4. Apply measurement techniques to other ecosystem components including water, vegetation, wildlife, and recreation systems.
5. Scale logs for the board foot volume based on mathematical formulations.
6. Apply various field-sampling methods.
7. Manipulate stand data using modeling software.
8. Select appropriate software and measurement tools to perform forest inventory, cruising, and scaling in an efficient manner and according to industry standards.
9. Collect and analyze data on the growth and yield of forest products over time.
10. Select and apply appropriate problem-solving techniques to specific measurement situations.
11. Measure and record data from a forest setting using state-of-the-art technologies utilized in the forest industry as well as simple measurement devices.

**Classroom Conduct:**

All students are expected to act in a mature manner that respects their fellow students, the instructor and any guest presenters.  Please turn cellular phones, pagers and all other electric devices **off** during class time.  **No** tobacco products or sunflower seeds in class or on field trips.

**{This is a computer lab: NO FOOD or DRINK!}**

**Cheating and Plagiarism:**

Cheating and plagiarism are serious offenses and will not be tolerated.  Students shall comply with Board Policy 5410; each student is expected to exert an entirely honest effort toward attaining an education.  Violations of this policy will result in failing grade on an assignment and/or the entire course.

**Accommodation Statement:**

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.

**Reedley College Policies:**

To receive a grade for this course, students must complete all assigned work.  It is your responsibility to stay informed on any changes to assignment due dates, readings, etc.  Missing a class doesn’t excuse you from this responsibility (i.e. if a due date for an assignment changes, new assignments are given, etc.).  This means you should ask a trustworthy classmate for notes if you are absent.  Being absent is not an excuse for late work, late assignments, or just not knowing what is happening.

**Field Trips:**

There may be some field trips taken during the semester.  These trips will generally occur during the scheduled class time.  However, we may return to campus after 3:50 pm on occasion or we may depart on days other than the scheduled class time.  Field trips are designed to allow for on-site observation of forestry measurement practices currently employed by industry.  Therefore, attendance and participation is mandatory.  This class will occur outside in an in-field laboratory setting.  Always come to lab prepared for outside activities.  Being prepared means sturdy hiking shoes or boot, long pants, long sleeved shirt, jacket, eye protection, hearing protection, hard hat, a lunch, and water.  If you miss a field trip, **NO** participation points will be credited.

**Attendance and Grading Policy:**

Late assignments will have 10% deducted each week.  After an assignment is submitted by the due date a student has one week to re-submit for a better grade.  Please communicate with me if you have extenuating circumstances which will cause a late assignment submission.    Individual participation will be considered when assigning your final grade. **If you miss class >6 times during the semester (without a valid reason) you may be dropped from the course**.  Exams may be curved based on a percentile of the highest point total in the class.  Extra-credit may be available. Final Grades will be assigned based on a straight percentage system according to the following scale:

**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, and exams. The weight of each grading component is as follows.

|  |  |
| --- | --- |
| **Item** | **Percent              Points** |
| **Midterm Exam(s)** | 20%                      150 |
| **Participation** | 20%                      100 |
| **Cumulative Final Exam** | 20%                       100 |
| **Lab Assignments** | 30%                       150 |
| **Quizzes** | 10%                         50 |
| **Total** | 100%                    500 |

Lab Assignments

Lab assignments will vary from practical skills assessments, computer assignments, and written lab reports. All assignments are due the following class period. Makeup lab assignments will not be allowed without a valid excuse.

Quizzes

Students will be given unannounced quizzes at random during lectures. Quizzes will cover material and terms presented in the lecture and are designed to test student comprehension.

Tentative Class Schedule Note: exact order of topics may vary depending upon scheduling of field trips and availability of necessary resources.

|  |  |  |
| --- | --- | --- |
| **Week          Date** | **Lecture – T** | **Lab – T** |
| **1    1/12** | Introduction  Standing Tree  Measurements (Trad). | Standing Tree Measurements (Trad). |
| **2    1/19** | Standing Tree Measurements (Relaskop). | Standing Tree Measurements (Relaskop) |
| **3   1/26** | Standing Tree Measurements (Relaskop/ RD 100). | Standing Tree Measurements (Relaskop). |
| **4   2/2** | Standing Tree Measurements (RD 1000) | Standing Tree Measurements (RD 1000) |
| **5    2/9** | Standing Tree Defects | Standing Tree Defects |
| **6   2/16** | Statistical Methods, Sampling Design | Statistical Methods & Sampling Design |
| **7   2/23** | **Exam 1** | TBA |
| **8   3/2** | Variable Plot Sampling | Variable Plot Sampling |
| **9     3/9** | Fixed Plot Sampling | Fixed Plot Sampling |
| **10  3/16** | Fixed & Variable Sampling | Riparian Zone RC Farm Laboratory |
| **11  3/23** | Log Rules & Log Scaling | Log Rules & Log Scaling |
| **12  3/30** | ***Spring Break 3/29 - 4/2*** |  |
| **13   4/6** | Inventorying with 3P Sampling        Inventorying with 3P Sampling | |
| **14  4/13** | Tree Growth, Stand-Table Projection & Review | Volume Equations |
| **15 4/20** | **Exam 2** | TBA |
| **16  4/27** | Timber Cruising | Timber Cruising  (tentative: Sequoia Lake/Hall Prop) |
| **17  5/4** | Non-Trad Cruising  (Veg Mgt) | Non-Trad Cruising  (Veg Mgt): RC Farm |
| **18  5/11** | Review | Lab Practicum |
| **Final Exam:** | **Tuesday, May 18st 9:00am-10:50am** | |