

Reedley College
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AgNR Department
Plant Science 11

Course Information

PLS 11 – Machine Technology

Catalog Description

Principles of machinery management, operations, and maintenance for tractors, farm implements, forklifts, and harvesting equipment.

Units and Hours

3 units; 2 hours lecture - MW 10:00 a.m. to 10:50 a.m.
3 hours lab' T 2:00 p.m. to 4:50 p.m.
Final: May 17, 2017– 10:00-11:50 p.m.

Textbook

Machinery Management, Fourth Edition Bowers.

Materials

- Approved Footwear - ScanTron 100 Question Test Cards - Calculator

Assignments and Grading

Three major tests will be given that correlate to the assigned readings and course lecture notes. Homework problem sets will be assigned and four laboratory practical exams are required. Weekly chapter quizzes will also be provided. A passing score of 70% on the safety exam is required to maintain enrollment in course.

Lecture:	Quizzes	140		
	Safety Test	100		
	2 Midterms	200		
	Homework	100		
	Final Exam	100		
	Laboratory:	Participation	180	
	<u>Practical</u>	<u>180</u>		
		1000		
90% = A	80% = B	70% = C	60% = D	Less = F

<u>Important Dates:</u>	Last Day to Drop Class with Refund:	January 20, 2017
	Last Day to Drop w/o Transcript Record:	January 27, 2017
	Last Day to Change CR/NR:	February 3, 2017
	Last Day to Drop w/o Letter Grade Assigned:	March 19, 2017

COURSE OUTCOME:

- A. Integration of costs, operation and safety into machinery management.
- B. Development of skills used in farming cultural operations

COURSE OBJECTIVES:

In the process of completing this course, students will:

- A. demonstrate the ability to safely operate farm equipment and identify safety hazards.
- B. perform standard pre-operational procedures on farm equipment and explain its importance in preserving equipment life and preventing unnecessary repairs.
- C. become knowledgeable and proficient with Global Positioning System guidance systems and identify applications in agriculture.
- D. competently maneuver farm tractors and equipment in precision operation courses and during turning, backing, field cultivation, herbicide and insecticide application, vegetation management, vertebrate pest control, bin and materials loading and forage planting and harvest.
- E. perform routine maintenance procedures and inspections on farm equipment.
- F. become effective in calculations pertaining to machine capacity, sprayer calibration, fertilizer application, horsepower, depreciation, operation costs, and custom operator costs.
- G. identify farm equipment, implements and agricultural chemicals and amendments, and relate the costs and specific application in cultural operations.

Assignments: All assignments are due at the beginning of class on the date due. Late submission of assignments will be assessed a penalty of 50%. No exceptions are made.

Academic Dishonesty: Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper or project; failure in course; and or expulsion from the University. For more information refer to the "Academic Dishonesty" policy in the College Catalog.

Need for Assistance: If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it, or which will require academic accommodations, please notify me as soon as possible.

Posting of Grades: Final grades will not be posted. If you wish to have your final grade sent to you, please bring a self-addressed, stamped envelope to the final exam.

Office Hours - Ag 4

Monday 9:00

Thursday 9:00

Friday 9:00 - Online

PLS 11 – Machine Technology**Lecture / Lab Schedule**

<u>Week</u>	<u>Topic</u>	<u>Reading Assignment</u>	<u>Laboratory</u>
1	Introduction	Chapter 1	Tractor/Implement ID
2	Equipment Safety	Prepared Materials	Basic Operation
3	Safety Test		Crawler/Skid Steer I
	Dimensional Analysis	Prepared Materials	Crawler/Skid Steer II
4	Measuring Machine Capacity	Chapter 2-3	Crawler/Skid Steer III
5	Implement/Operation ID		Back Hoe I
6	Matching Machine Size & Capacity	Chapter 4	Back Hoe II
7	Estimating Power Requirements	Chapter 5	Back Hoe III
8	Review & Midterm		Bio-Diesel Synthesis
9	Estimating Fixed Costs	Chapter 6	Forklift I
10	Estimating Fuel & Lubricant Costs	Chapter 7	Forklift II
11	Estimating Repair Costs	Chapter 8-9	Forklift III
12	Sprayer Calibration		Sprayer Calibration
13	Review & Midterm		Wheel Tractor I
14	Deciding When to Trade	Chapter 10	Wheel Tractor II
15	Considering Future Capacity Needs	Chapter 11	Vineyard Operations
16	Calculating Custom Work Costs	Chapter 12	Forage Harvest
17	Comparing Ownership, Leasing, & Rental Costs	Chapter 13	Row Crop Operations Precision Ag Applications
18	Final Exam		