Course Description:
The principles of operation, adjustments, calibration, and safety of wheel and track-type tractors. Selection, operation, and theory of operation of equipment commonly used in California agriculture. 2.0 hours lecture, 3.0 hours

Instructor:
Justin Edson

Lab Office Hours and Contact Information:
Office hours & locations: Tuesday & Thursday 9:00-10:30 Plumas 104 & 12:30-1:30 Farm shop, Wednesday 9:00-10:30 Farm Shop, and by appointment.
Office phone: 530-898-1548
Email: jcedson@csuchico.edu
Email is the best way to contact the instructors outside of class or office hours. Emails are generally answered within 12 hours or less. However some student messages may be trapped by the campus spam filter. To reduce your chances of having your message blocked always include a subject line, don’t add links to the message, and don’t type in all caps. If it has been more than 12 hours with no response please send another email or use other means to contact me.
Cell Phone: 530-228-0486 (only in emergency situation please)

Class Meeting:
Lecture: Plumas 201 Tuesday & Thursday 11:00-11:50
Lab: Meets at SHOP II (Farm) Tuesday, Wednesday, or Thursday 2:15-4:50, or Wednesday 11:15-1:50. Lab starts PROMPTLY at 15 minutes after the hour. Students are expected to remain and participate until released.

Course Objectives:
Students will:

- Have an understanding of safe agricultural tractor/equipment operations and managers responsibilities for employee safety training.
- Have an understanding of machinery and machinery practices as part of a sustainable agriculture system.
- Be able to operate tractors with common implements including backing, hitching, and field operations.
- Be able to perform pre-start inspections.
- Have knowledge of tractor mechanical, hydraulic and electrical systems.
• Have a basic understanding of the use of common tractor implements.
• Have a basic understanding of tractor selection criteria and operating costs.
• Have a basic understanding of machine maintenance programs.
• Be able to identify machinery commonly use in California.
• Have a basic understanding of the setup and adjustment of sprayers, planters, fertilizer applicators, and tillage equipment.
• Understand how machinery is used in sustainable agricultural practices.
• Be able to solve problems common to machinery setup and operation.

**Dress:**

Labs will often be conducted at the Farm and will include tractor and machinery operations. Old clothes are recommended and **closed toe shoes are required.** Failure to wear proper shoes will result in loss of lab attendance points for the day.

**Safety:**

Safety is a primary concern while operating equipment. Students that are not operating in a safe manner will not be allowed to participate and a no lab points will be given. Chronic problems with safe operation will result in a grade of "F" and removal from the course. Many of the machines are loud and prolonged exposure may cause hearing damage. Class exposure is brief, but students may wish to use hearing protection for some lab exercises. Hearing protection devices are available from local tool and equipment suppliers. Head phones are not a substitute for hearing protection and will not be worn/used during lab or lecture.

**Required Texts & Equipment:**

• John Deere. Introduction to Crop Production. John Deere Publication. ISBN# 0-86691-363-7
• On-Line text. Students are responsible for reading this material.
• Agricultural Machine Systems Lab Manual and Course Reference (available at the bookstore). Students are required to bring the entire lab manual to lab.
• Scientific Calculator. Students are required to bring the calculator to class and lab. **NOTE: A cell phone is not a substitute for a calculator, and will not be allowed to be used during tests.**
• Web Site and Computer Use: Computers are an integral part of agricultural mechanics industry and students are expected to use this technology as part of the course. Some materials for this course are found on the course web site delivered by Blackboard. These materials are an integral part of the course and students will be expected to review it regularly. Written report assignments are expected to be typed. Labs with questions may be handwritten as long as the handwriting is neat. If in doubt type your
answers. Generally, assignments will be provided in MS-Word format allowing the student to print and edit the document. Students not familiar with computers or use of the Web (or Blackboard) are strongly encouraged to seek training (see instructor for further information). Computer portions of this course can be completed on a home computer with an internet connection or in a campus computer lab (see http://www.csuchico.edu/stcp/labs/). Information on other computer resources for students is available at: http://www.csuchico.edu/stcp/

On the web site (Blackboard) students will find:

- Assessments
- Online reading
- Lecture Notes provided as a study aid only
- Lab Exercises (PDF), useful if a clean copy is needed
- Grades (generally posted after the 4th week)
- Assignments
- A current course activity schedule (syllabus and announcements)
- Other resources that will help students complete assignments.

**Lab Manual:**

Students are required to keep a binder of lab materials and machinery handouts. This notebook will be a useful study guide for the course and a future reference. For full credit binders will include completed lab assignments, equipment handouts & other readings (from web site), and tailgate topic sheets, other assignments separated by tabs. See complete grading sheet in the Lab Manual. Note: Not all lab exercises may be completed.

**Lab Attendance:**

An important part of the class is lab participation (28% of total points). In lab you will work with machinery and study the concepts of machine operation in hands on activities. The lab component is an integral part of the class; attendance will be taken and graded.

**Quizzes:**

15% of your grade is based on quizzes. Pop quizzes are given at random either in lecture or lab. Quiz material will focus on the assigned reading and the previous week’s lab. Other quizzes will be taken via Blackboard Learn. Blackboard quizzes will open each Tuesday at 11:00am and will close the following Tuesday 10:59am. Once the quiz closes, it is closed and there will be no more attempts.

**“Tailgate” Safety Talks:**

Each student is required to prepare and present a 5-7 minute safety talk in lab. This exercise is designed to simulate the role typical of a manager/supervisor training employees. Topics must
be directly related to agricultural machinery. A template is available on the course web site. Tailgate talks should address the safety problem and provide some background, provide some talking points, and list some questions. Topics will be 1-2 pages in length. Topics will be posted electronically to the course web site to receive full credit (see assignment). **Note: Topics missed without prior notice cannot be made up.** Students are responsible for signing up (first 2 weeks of class), keeping track of the presentation date, bringing the grade sheet and copy of your written portion for the lab instructor plus copies for all the students in your lab (16 copies). If you bring your written portion to the instructor at least 24 hours before your presentation copies will be made for you.

**Grading:**

All grades will be posted to Blackboard.

Grades will be determined by:

- Online Assignment 100
- Safety Program Assignment 100
- Calibration Worksheet 100
- Blackboard Quizzes (11 @ 25 points) 275
- Pop Quizzes 100
- Notebook 100
- Tailgate Topic 100
- Lab Attendance (14 @ 50 points each) 700
- Lab Reports (14 @ 50 points each) 700
- 2 Midterm (50 points each) 100
- 1 Final exam (comprehensive) 125

2500

Grades will be assigned using the following scale:

- 94% - 100% A
- 90% - 93.99% A-
- 87% - 89.99% B+
- 83% - 86.99% B
- 80% - 82.99% B-
- 77% - 79.99% C+
- 73% - 76.99% C
- 70% - 72.99% C-
- 67% - 69.99% D+
- 60% - 66.99% D
- ≥59.99% Failure

Instructor does not give final grades, grades are earned by the student and assigned by the instructor based on the percentage of points the student has earned throughout the semester.

**Course Management:**

- Labs are due in the lab the week following the activity. Late labs are not accepted.
- **Students are expected to turn off all pagers, cell phones and other electronic devices during class time. Please NO TEXTING or laptop personal use.** Students may use a
laptop during lecture for the purpose of taking notes and/or following along with PowerPoint lectures only. Instructor reserves the right to look at the laptop to confirm the proper use during class time. If this rule is broken the instructor may prohibit any and all students from using their laptops during class time.

- Students are strongly advised not to miss labs since this time may be difficult or impossible to make up. No written assignments will be accepted after the assigned due date without prior permission of the instructor.
- No makeup of quizzes, written assignments, labs, etc. will be allowed unless by prior permission of the instructor.
- Blackboard quizzes/surveys cannot be taken after the due date.
- Cleanup of the shop is part of the laboratory exercise. Students not participating in shop cleanup will have points deducted from their lab grades.
- Quizzes/Tests will be a combination of multiple choice, problems, and/or short answer. They may include identification of equipment and parts from lab.
- Student grades will be posted on Blackboard and it is the responsibility of the student to check their grade for accuracy. If a student feels an error in grading has been made, the student has one week from the time of the assignment is returned to them (or the grade is posted on the web, whichever is later) to request a review of the grade. The request must be in writing – attached to the original assignment—and must include a specific statement as to what is in error, how it should be corrected, and what supporting evidence is available.
- Use of tobacco products (including chewing tobacco) is not allowed during class/lab, and can/will result in the student being ask to leave the remained of the lab period and lose of daily points.
- Students are expected to pay attention and participate in class meetings.
- All class participants are expected to exhibit respectful behavior to other students and the instructor.
- All students have the right and privilege to learn in the class, free from harassment and disruption.
- Inappropriate or disruptive behavior will not be tolerated, nor will lewd or foul language. Policies Common to the University and College of Agriculture University and College Policies will be enforced in this course. See: http://www.csuchico.edu/ag/_assets/documents/syllabi/COACommonSyllabusPolicies.pdf
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<tr>
<th>Week of:</th>
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<th>Required Readings</th>
<th>Quiz</th>
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<td>24-Aug</td>
<td>Introduction</td>
<td>Almond harvest</td>
<td>Tractors Chapter 1, ITCP Chapter 1</td>
<td>BB Intro Quiz</td>
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<td>31-Aug</td>
<td>Safety</td>
<td>Safety &amp; Getting to know tractors</td>
<td>Tractors Chapter 7</td>
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<td>7-Sep</td>
<td>Power Systems</td>
<td>Operation #1</td>
<td>Tractors Chapter 2</td>
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<td>14-Sep</td>
<td>Other Systems</td>
<td>Ballasting</td>
<td>Tractors Chapter 3</td>
<td>BB Quiz 3</td>
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<td>21-Sep</td>
<td>Soils</td>
<td>Operation #2</td>
<td>ITCP Chapter 2</td>
<td>BB Quiz 4</td>
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<td>28-Sep</td>
<td>Tillage</td>
<td>Soil &amp; Tilling</td>
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<td>5-Oct</td>
<td>Implements</td>
<td>Operation #3</td>
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<td>BB Quiz 6</td>
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<td>12-Oct</td>
<td>Field Operation</td>
<td>Operation #4</td>
<td>Tractors Chapter 6</td>
<td>BB Quiz 7</td>
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<td>19-Oct</td>
<td>Maintenance &amp; Storage</td>
<td>Grain Drill</td>
<td>Tractors chapter 8</td>
<td>BB Quiz 8</td>
<td>Calibraton Worksheet</td>
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<td>26-Oct</td>
<td>Planting</td>
<td>Planters</td>
<td>ITCP Chapter 4</td>
<td>Midterm 2</td>
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<td>2-Nov</td>
<td>Chemical application</td>
<td>Fertilizer &amp; Spray Calibration</td>
<td>ITCP Chapter 5</td>
<td>BB Quiz 9</td>
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<td>9-Nov</td>
<td>Combine</td>
<td>No Lab Thank a veteran</td>
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<td>BB Quiz 10</td>
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<td>16-Nov</td>
<td>Hay &amp; Forage</td>
<td>Combines</td>
<td>ITCP Chapter 7</td>
<td>Midterm 3</td>
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<td>23-Nov</td>
<td>Happy Thanksgiving</td>
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<td>30-Nov</td>
<td>Hay Equipment</td>
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<td>BB Quiz 11</td>
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<td>7-Dec</td>
<td>Review for final</td>
<td>GPS Leveling &amp; Guidance</td>
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<td>BB Quiz Review</td>
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<td>14-Dec</td>
<td>Final TBA</td>
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Lab schedule may change due to weather and availability of equipment.
Chapter readings should be done prior to first lecture of the week (EX. Chapter 7 should be read by Tuesday 1 Sept)
BB Quiz will close at 10:59 am every Tuesday.
Assignments are due via blackboard by 11:59pm on Thursday of the due week.