

AGET 120 Course Syllabus

Course Description:

Shop skills essential to mechanized agriculture, including welding, metal and wood fabrication tools, tool sharpening, and threading. Proper selection, use, repair, and safety of the tools and machines will be emphasized. 2.0 hours lecture, 3.0 hours laboratory.

The course is designed to meet the portion of the California agricultural credential requirements for agriculture in Standard 7 dealing with shop skills. The knowledge and skills in agricultural mechanics are fundamental to most areas of agriculture. Additionally, it is essential that students are prepared to safely operate agricultural tools and equipment.

Instructor:

Michael Spiess

Office Hours and Contact Information:

Current contact information and office hours are available on Vista. See the Contact Me icon. Note: 2 hours/week are held in Shop II to help students in this class.

Note: Email is a good way to contact the instructor 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.

Class Meeting:

Tuesday and Thursday 1100-1150 at Plumas 303, Lab Tuesday or Thursday 1400-1650 in Shop II.

Course Objectives:

Students will:

- Have an understanding of basic shop tasks commonly found in agriculture
- Be able to perform basic shop tasks common to agriculture
- Develop the ability to work safely in a shop environment.
- Demonstrate their ability to layout projects from drawings.
- Be able to create drawings of simple projects.
- Be able to correctly identify common tools and materials
- Develop an understanding of projects and materials that will enable them to create a bill of materials for common farm or classroom projects
- Be able to solve project construction problems such as efficient use of materials, materials selection, etc.

The course includes the study and practice of the following skills:

- Safe use, care, and maintenance of hand/power tools and shop equipment common to the agricultural/horticultural industry.

- Agricultural applications of electric welding, oxy-fuel cutting, and oxy-fuel brazing.
- Cold metal and sheet metal skills.
- Agricultural applications of plumbing and electrical skills.
- Agricultural applications of wood working and construction procedures.
- Applications of land measurement and surveying principles.
- Mixing, pouring, and finishing concrete.
- Drafting and creating and interpreting drawings.

Lab Dress:

Old clothes, shop coats, or coveralls. No loose clothing. Long hair must be restrained. Closed toe shoes are required, work boots are recommended. Safety glasses will be worn at all times.

Safety:

Safety is a primary concern while working in the shop. Students that are not working in a safe manner will be required to leave the shop. This includes failure to wear adequate eye protection. Many of the machines in the shop 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 protections devices are available from the suppliers listed below.

Required Equipment:

- OSHA approved CLEAR safety glasses or goggles (prescription or dark glasses are not acceptable). Glasses must have side shields.
- 6' x 1/2" steel tape measure or larger
- Pencil
- It is highly recommended that students purchase a 12" combination square (comes with a scribe).
- Equipment can be purchased at Home Depot, Lowe's, or OSH, Meeks, Collier Hardware, or other supplier.

Required Texts:

Herren, Agricultural Mechanics Fundamentals & Applications, 4th or 5th or 6th edition.. Students are expected to have read the assigned reading before lecture. They should be able to answer the questions at the end of each chapter. Quiz and test materials will be drawn from the text, lecture, and other materials provided in the course. Note: This text is also required for AGRI 421.

Introduction to Agricultural Mechanics Lab Manual (available at the AS Bookstore and online in Vista). Students are required to bring the lab manual to every lab.

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 Vista. These materials are an integral part of the course and students will be

expected to review it regularly. Written assignments are expected to be typed. 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 Vista) 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 students will find:

- Tool ID & Materials pictures.
- Lecture Notes (in MS-Word) provided as a study aid only.
- Lab Exercises
- Grades (generally posted after the 4th week)
- Assignments
- A current course activity schedule
- Other resources and required reading.
- Resource materials for safety presentations

Extra Credit Service Learning Activity:

Students may elect to participate in a service learning activity for a minimum of 10 hours during the semester. The purpose of this activity is to relate course content to a service activity. Service involving building construction, landscape construction, or other activity that uses the skills taught in this course. The recommended activity is participation in a current Habitat for Humanity project. However, any community service (not for profit) activity related to the course content is acceptable (**prior approval required**). The service experience is useful as an expansion of the student's in-class experience and because opportunities exist for teachers of mechanized agriculture to provide service learning experiences to their students. Forms for this activity can be found on the course web site.

Unit Tests:

Beginning in week two, a short "unit test" will be given each week at the beginning of class. See Vista for schedule. This will cover the material from the previous weeks lab (tools, materials, safety, etc.) with related reading and lecture. No make-ups will be allowed. Students with excused (prior notice required) absences will be given an alternate assignment or have their grade adjusted. Questions will be a combination of short answer, multiple choice, problems, and tool ID.

Safety Demonstrations:

Students are required to present a safety demonstration in lab. These demonstrations should include a discussion of the safe operation procedures for the tool(s) chosen as well as a demonstration of safe operation. Resource materials (and grading criteria) are available on the course web site. Additional resources can be found in the text and on the WWW. No makeups are possible since the safety demonstration is an integral part of the lab instruction. If a student will miss their assigned lab then they should switch topics with another student and notify the instructor. Assigned dates are on the lab schedule. Talks should be **5 minutes** in length. Your outline (talking points) and grade sheet are due with the talk.

Course Management:

- Students are expected to turn off all pagers, cell phones and other electronic devices during class time. Use of cell phones, pagers, and similar electronic devices during class are disruptive to the class and prohibited. Please NO TEXTING or Laptop use.
- Students are strongly advised not to miss labs since this time may be difficult or impossible to make up.
- No makeup of tests, quizzes, etc. will be allowed unless by prior permission of the instructor.
- Cleanup of the shop is part of the laboratory exercise. Students not participating in shop cleanup will have points deducted from their project grades.
- No written assignments will be accepted after the last lecture meeting. Late assignments are subject to a 20% penalty. No lab projects will be accepted after the Final Exam.
- Tests will be a combination of multiple choice, short answer, and problems. They will include identification of tools and materials.
- **Lab projects are due in the following lab.** Lab projects are typically graded one to two weeks after the lab day. Lab projects will be scored according to the criteria included with the lab. If a project score is protested, then the entire project will be re-graded.
- Student grades will be posted on Vista web site 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. It is highly recommend that students keep copies of assignments.
- Use of the shop outside of the scheduled class time will be permitted provided that an instructor is in the building (i.e. during office hours) and at least two students are in the shop (for safety). Students are expected to work safely and thoroughly cleanup. Abuse of this privilege will result in loss of the privilege.
- Use of tobacco products is not allowed during class.
- 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.

Grading:

Grades will be determined by:

	Approximate Points
Written assignments	100-150
Safety Presentation (lab)	25
Unit Exams (weekly)	325
Project Plan	50
1 final exam (comprehensive including tool & material ID)	150
Lab exercises	430

Grades will be assigned using the following scale:

94% - 100%	A
90% - 92%	A-
87% - 89%	B+
83% - 86%	B
80% - 82%	B-
77% - 79%	C+
73% - 76%	C
70% - 72%	C-
67% - 69%	D+
60% - 66%	D
Below 60%	Failure

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/COACCommonSyllabusPolicies.pdf

Course Schedule

Tool ID Assignments refers to tools or materials in the listed category on the [Tools](#) and [Materials](#) web site.

*Complete before first lecture of the assigned week.

** Students should be prepared to demonstrate the hazards and safe use of their assigned tool at the beginning of the lab.

Week	Topic	Lecture Notes	Reading	Tool ID Category	Lab Topic	Safety Demonstration Schedule**
8/23/2010	Introduction, Safety, Measuring, Reading Drawings, Ropework and Knots	Introduction Rope and Chain	Unit1-6 See Rope Reference on web site	Rope	Shop Tour & Safety Orientation, Measuring Ropework & Securing Loads	
8/30/2010	Introduction to Tools and Materials, Project Layout/ Drawing	Layout	Unit 7-8	Cold and Hot Metal Tools	Tool Sharpening Template	Sheet Metal and Shear, Portable Drills
9/6/2010	Land Measurement	Land Measurement	See Land Measurement Reference	Surveying	Land Measurement	Drill Press
9/13/2010	Electricity	Electrical	Unit 32-35	Electrical Tools and Materials	Electrical	Electrical, Band Saw
9/20/2010	Concrete/Forming	Concrete	Unit 39	Concrete Tools and Materials	Concrete	Concrete & Mixer, Power Miter Saw
9/27/2010	Woodworking	Woodworking Tools, Drawing	Unit 9-11, Unit 17	Fasteners	Woodworking	Saber Saw Table Saw
10/4/2010	Sheet metal / Bills of Materials	Sheet metal	Unit 12-13, Unit 18-19		Sheet Metal (toolbox)	Brake & Spot Welder Hydraulic Shear

Week	Topic	Lecture Notes	Reading	Tool ID Category	Lab Topic	Safety Demonstration Schedule**
10/11/2010	Introduction to Welding	Welding	Unit 22-26	Welding Tools	Arc Welding / Gas Welding & Cutting	Oxy-Acetylene, Arc Welding Equipment
10/18/2010	Cold Metal / Hot Metal	Cold & Hot Metal	Unit 16	Cold & Hot Metal Tools	Arc Welding / Gas Welding & Cutting	
10/25/2010	Tool Sharpening, Care of Tools	Tool Sharpening	Unit 20-21		Arc Welding / Gas Welding & Cutting	Plasma Cutter
11/1/2010	Plumbing	Plumbing	Unit 36-38	Plumbing Tools and Materials	Cold Metal / Hot Metal	Circular Saw
11/8/2010	Lumber	Woodworking Lumber	Review Unit 9	Wood/Construction	Tool Sharpening	Grinders
11/15/2010	Woodworking/Construction	Wood Building Construction	Unit 40-42		Plumbing	Plumbing
11/22/2010	Thanksgiving Break				NO LAB	
11/29/2010	Painting materials and methods, Glazing	Painting	Unit 27-28	Painting Tools	Rafter / Paint Prep	Painting, Sanders
12/6/2010	Project Design Review All Lab Projects Due	Shop Planning			Painting / Shop Cleanup	Jointer/Surface Planer
12/13/2010	FINAL EXAM Thursday 12/16 1000-1150	Final exam is required and will be given to all students at the scheduled time unless the student has a serious and compelling reason.				

Course Schedule: The course schedule is subject to change. Changes will be announced in class and posted on the course web site.

Written Assignments: Assignments are available on the course web site.