

Agriculture and Environmental Education 103
(CRN 86860)

Basics of Agricultural Mechanics

Instructors:

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Course Meetings:

Mondays, 3:00-5:00 p.m.
Room 142 and 144 Agricultural Sciences Annex

Textbook:

Burke/Wakeman, *Modern Agricultural Mechanics*

Course Description:

Six areas of basic shop work: carpentry, cold metal work, hot metal work (forge, electric and gas welding), sheet metal (soldering, forming, cutting, riveting), tool care and plumbing.

Course Objectives:

Upon completion of this course, the student will have acquired knowledge, skills and attitudes which will allow him/her to perform basic operations in:

- a. shop ethics and safety
- b. electric arc and mig welding
- c. oxyacetylene welding, cutting and brazing
- d. tool conditioning
- e. hot, cold and sheet metal work
- f. carpentry

Required Supplies:

Costs to Students

Students are responsible for providing the following items:

- a. Safety glasses/goggles
- b. Welding gloves
- c. Slip joint pliers
- d. Proper clothing (welding/safe)
- e. Leather shoes/boots
- f. Materials for individual Projects

Evaluation:

Grades will be based upon the following:

Grading:	Point Value:	Overall Assessment:
Safety	200	A = 93% 1065-990
Electric Arc Welding	100	A-= 90% 989-959
MIG Welding	100	B+= 87% 958-927
Oxy-Acetylene	90	B = 84% 926-895
Tool Conditioning	80	B- = 80% 894-852
Cold Metal	80	C+= 77% 851-820
Carpentry & Sheet Metal	90	C = 74% 819-788
Quizzes	150	C- = 70% 787-745
Clean-up	75	D+= 67% 744-714
Final Exam	<u>100</u>	D = 64% 713-682
Total Points:	1065	D- = 60% 681-639
		F = 59% 638 & below
(5% will be deducted from the final grade for each unexcused absence)		

Anticipated Schedule:**1 period Orientation**

Demonstrations
Shop Safety
Assignments

4 periods Arc & MIG Welding – (Arc 100 pts & MIG 100 pts)

Strike arc, run flat beads -25 pts
Weaving Beads -25 pts
Butt welds -25 pts
Fillet welds -25 pts

4 periods Oxyacetylene – 90 points

Light and adjust torch -20
Melt strips -10 pts
Beads -10 pts
Butt welds -10 pts
Bronze beads -10 pts
Bronze butt welds -10 pts
Cutting with torch -10 pts

3 periods Tool Conditioning – 80 points

Plane iron/wood chisel -10 pts
Cold chisel -10 pts
Center punch -10 pts
Auger bit -10 pts
Twist drill bit -10 pts
Tin snips/scissors -10 pts
Screwdrivers -10 pts
Replace handles -10 pts
(and others)

2 periods Cold Metal – 80 points

Cutting -10 pts
Tool gauge -50 pts
Threading -10
Bending -10

5 periods Carpentry and Sheet Metal – 90 points

Reading Measurements -25 pts
Nail/Screw Sizes and Uses – 10 pts
Cutting -10 pts
Attachments -10 pts
Soldering Exercises -10 pts
Construction (funnel, dust pan or feed scoop) -25 pts

1 or 2 periods Assist with State Career Development Event in Ag Mechanics

2 periods Student Choice

Completion of skill exercises
Advanced welding
Advanced carpentry
Forging and heat treatment of steel
Plumbing

Final Exam: 100 points

Comprehensive Written and Practical Exam

NOTE: The instructor reserves the right to alter this syllabus in any way by announcement in a regular class meeting, via email, written notification, or otherwise.