

Discipline: Agriculture	Sub-discipline: Mechanized Agriculture
General Course Title: Introduction to Mechanized Agriculture	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description: Basic mechanical skills in woodworking, cold metal, electricity, plumbing, concrete, and project construction skills as related to farm maintenance and repair. Development of hand and power tool skills as well as emphasis on safety practices for all mechanical areas. Laboratory required. (C-ID AG-MA 104L)</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Differentiate between the four metal joining processes demonstrated in class • Select the proper method of joining metals and materials • Identify and demonstrate proper use, care, and adjustment of common and precision tools and machines found in the farm shop • Compute common shop problems regarding measuring and ordering supplies and equipment for given applications • Demonstrate ability to communicate and work cooperatively with others • Identify safe shop practices and potentially hazardous safety conditions in the shop • Demonstrate knowledge of rope knots by tying several useful knots • Prepare a simple three dimensional drawing showing top, end, and side views • Apply the techniques of sharpening and refitting common farm tools • Explain the methods of painting, types of paints, their preferred uses, and cleanup procedures • Select the most adequate (cost and quality) supplies (lumber, steel, materials) for a given situation—fence, building, etc. • Identify types of threads and properly use taps, dies, twist drills, and common fasteners. Measure and thread pipe, and correctly identify the more commonly used fittings • Illustrate knowledge of concrete by forming, pouring, screeding, and finishing a slab to a proper size and slope • Assemble an electrical wiring board or display as per instructions 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Farm construction work <ol style="list-style-type: none"> a. Measuring, marking b. Hand tools, their care, proper use and operation c. Power tools—how to operate, adjust, and repair d. Surveying, squaring and leveling tools e. Safety rules and considerations 2. Cold metal <ol style="list-style-type: none"> a. Use and sharpening of hand tools such as chisels, punches, scribers, taps, and dies b. Operation and care of power metal working tools c. Bending, drilling, marking, threading, and sawing metal <p>Introduction to Mechanized Agriculture (Content Continued)</p>	

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

3. Wood work
 - a. Use and care of tools and machines used in wood working
 - b. Selection and characteristics of different woods
4. Sheetmetal
 - a. Layout
 - b. Cutting and bending
 - c. Soldering
 - d. Operation and care of sheetmetal tools
5. Plumbing
 - a. Operation and care of plumbing tools
 - b. Types of fittings
 - c. Layout and measuring
6. Construction materials
 - a. Properties of metals, woods, etc.
 - b. Figuring bills of materials
 - c. Fasteners of all types
7. Blueprints
 - a. Sketching
 - b. Reading blueprints
8. Concrete
 - a. Physical properties
 - b. Estimating quantities, figuring costs
9. Paints
 - a. Types
 - b. Mixing
 - c. Application and cleanup
10. Electrical
 - a. Splices and connections
 - b. Lighting circuit, receptacle circuits
 - c. Safety with electricity

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers	Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Reports Diagnostics and Problem Solving Laboratory Skill Practicum Certification Exams
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Typical Textbooks, Manuals, or Other Support Materials
Agricultural Mechanics, Fundamentals of Applications., Herren
 6th Edition, 2009

Statewide Articulation: Formally CAN AG 4, CPSLO-BRAE 121, CSUF-MEAG 1, CSUC-AGET 120, others as lower division electives.

FDRG Lead Signature: _____ Date: _____
 Mark E. Bender, PhD CSU Stanislaus

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