Las Positas College
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Course Outline for WLDT 1

WELDING CAMP

Effective: Spring 2018

I. CATALOG DESCRIPTION:
WLDT 1 — WELDING CAMP — 1.00 units

This course is designed to introduce the basics of shop safety, hand tools and welding. Fabrication of simple metal projects. Emphasis on practical uses and applications.

0.50 Units Lecture 0.50 Units Lab

Grading Methods:
Pass/No Pass

Discipline:
- Welding

	MIN
Lecture Hours:	9.00
Lab Hours:	27.00
Total Hours:	36.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Operate safely in a welding workplace environment
B. Demonstrate proper hand tool usage
C. Apply basic welding techniques in one or more processes
D. Demonstrate basic metal fabrication skills
E. Use welding support equipment

V. CONTENT:
A. Welding Workplace Safety
1. Personal Protective Equipment (PPE)
2. Fumes
3. Gasses
4. Electrical
5. Radiation
6. Mechanical hazards
7. Fires and explosion
8. Working around others
9. Safety Data Sheets (SDS)

B. Hand Tools
1. Measuring
2. Clamping
3. Screwdrivers
4. Pliers
5. Hammers
6. Punches and Chisels
7. Saws
8. Wrenches
9. Files
10. Hand Shears

C. Welding Processes
1. Shielded Metal Arc Welding (SMAW)
2. Gas Metal Arc Welding (GMAW)
3. Gas Tungsten Arc Welding (GTAW)
4. Flux Core Arc Welding (FCAW)

D. Basic Metal Fabrication
1. Planning
2. Construction

3. Finishing

E. Welding Support Equipment
   1. Grinders
   2. Drill Press
   3. Power Saw
   4. Plasma Cutter
   5. Material Handling

VI. METHODS OF INSTRUCTION:
- A. **Field Trips** -
- B. **Lecture** -
- C. **Lab** -
- D. **Projects** -
- E. **Demonstration** -

VII. TYPICAL ASSIGNMENTS:
- A. Lecture
  1. Read the chapter on welding processes
     a. GTAW
     b. SMAW
- B. Lab
  1. Hand Tool Usage in lab
     a. Use the tape measure to determine the length
     b. Hammer the material flat
     c. Tighten the fastener using the wrench
- C. Field Trip
  1. Report on the welding processes you saw used
  2. What hand tools were seen?
  3. Did you see any unsafe conditions?
- D. Projects
  1. Garden shovel
  2. Hand Forged Hook
  3. BBQ
- E. Demonstrate
  1. Grinder
  2. Saw
  3. Drill Press

VIII. EVALUATION:
- A. **Methods**
  1. Exams/Tests
  2. Projects
  3. Lab Activities
- B. **Frequency**
  1. Exams
     a. Outset of course
  2. Projects
     a. As assigned
  3. Lab Activities
     a. Ongoing

IX. TYPICAL TEXTS:

1. Bowditch, W., Bowditch, K., & Bowditch, M. (2017). *Welding Fundamentals* (5th ed.). Tinley Park, IL: Goodheart Willcox.
2. American Welding Society (2015). *Welding Code - Structural Steel* (D1.1/D1.1M ed.). Miami, FL: American Welding Society.
3. Walker, J., & Polanin, R. (2016). *Shielded Metal Arc Welding* (1 ed.). Tinley Park, IL: Goodheart Willcox.

X. OTHER MATERIALS REQUIRED OF STUDENTS:
- A. Safety Glasses
- B. Gloves